

NOVEMBER 1951

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BUILDING TYPES STUDY NUMBER 180 SCHOOLS

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LOCKSETS



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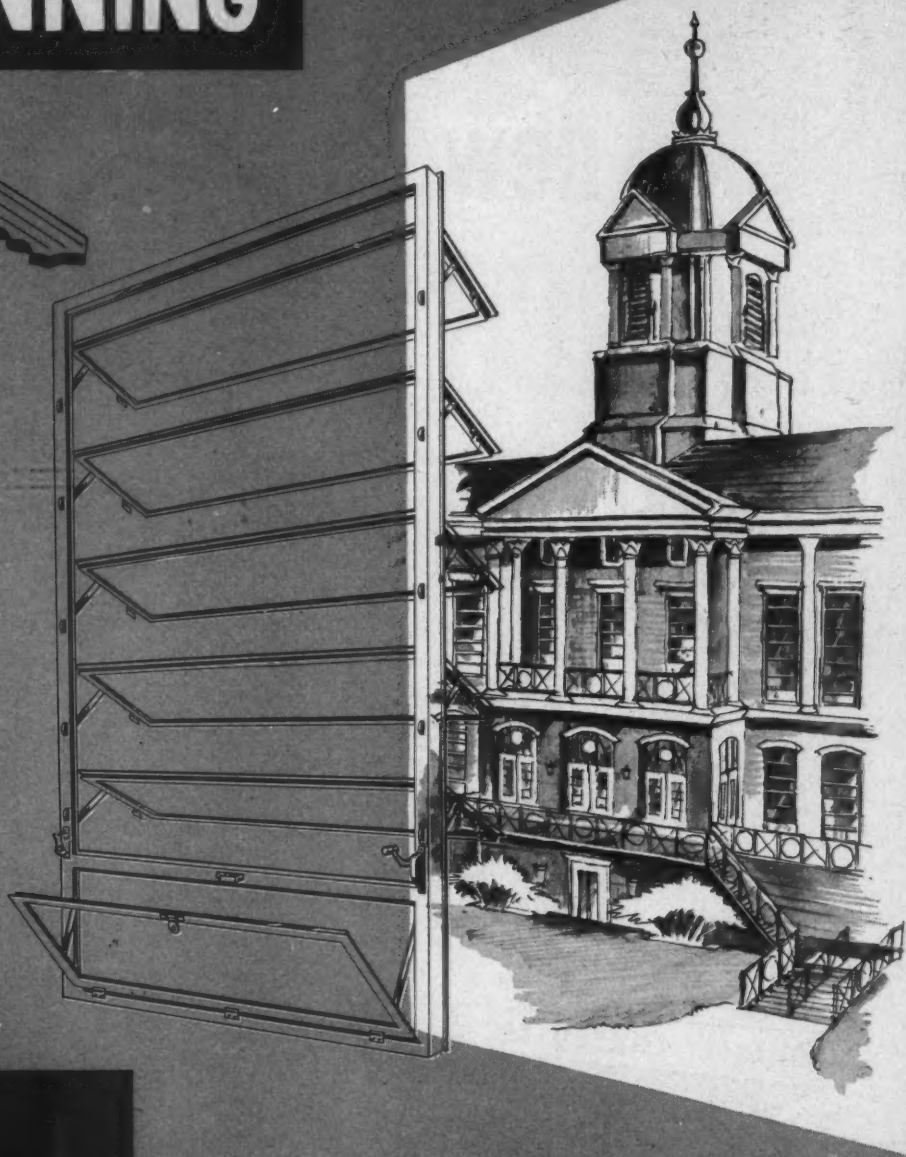
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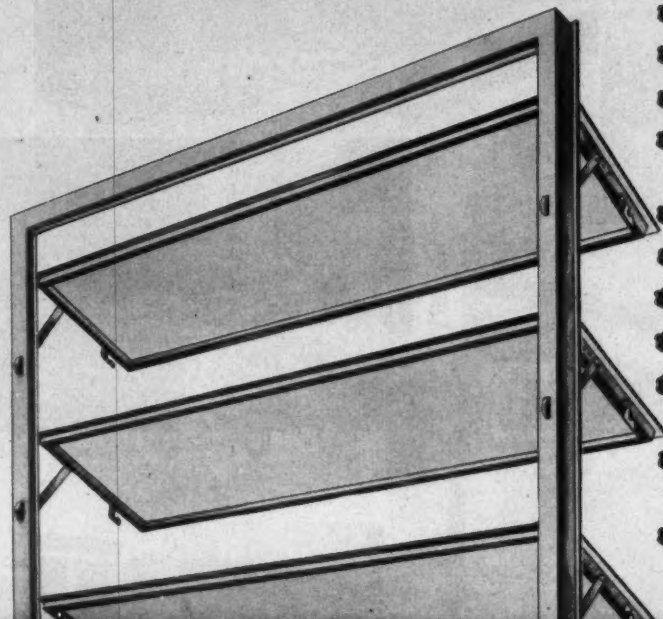


through



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Architect: Charles J. Marr, New Philadelphia, Ohio
Associate Architects: Scheeren & Rittenhouse, Kittanning, Pa.
Contractor: Fred Lundgren, Kittanning, Pa.



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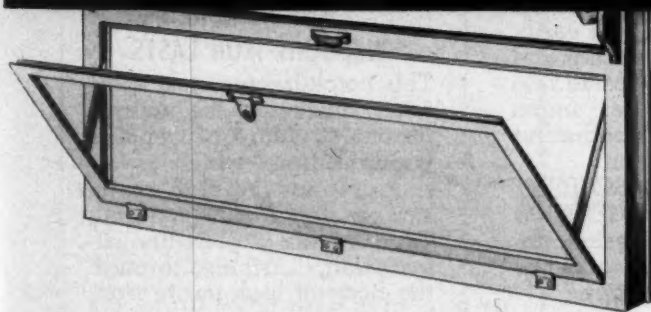
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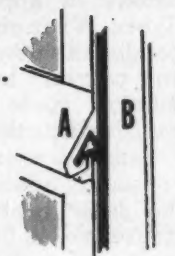
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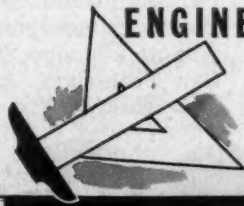
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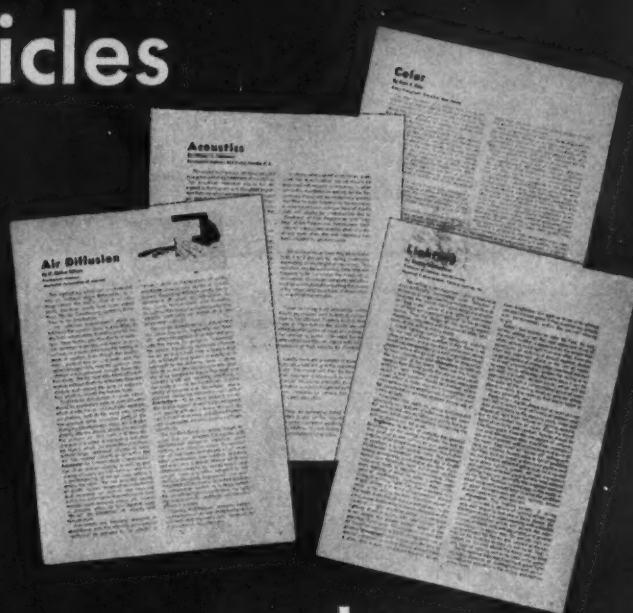
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AIR CONDITIONING THE SMALL STORE

By T. W. Reynolds



T. W. REYNOLDS—until recently Chief, Air Conditioning Division, Abbott, Merkt & Co., N.Y. During Mr. Reynold's long and varied career in air conditioning, he has contributed greatly to the advancement of the profession. A wartime consultant to the W.P.B., he passed on all mechanical construction in the U.S. Among his many notable achievements

was the design of the air conditioning system in the Perisphere of the New York World's Fair, 1939.

In these days of keen competition, enterprising retail-store owners are quick to recognize the value of air conditioning as an important aid in selling merchandise. It has often been proved that the air conditioned store not only attracts more customers, but handily outsells the store which does not have this modern improvement.

As an experiment, a merchant with two similar stores in a thriving midwestern city decided to install an air conditioning system in one store, but not the other, and to compare results. Winter sales were much the same in both stores. But summer sales fell alarmingly in the non-air conditioned store.

This is readily understandable. Customers and salespeople are more comfortable and stay in a better frame of mind in the air conditioned store. Customers are more receptive to sales suggestions—more easily influenced to buy, and both the efficiency and morale of salespeople remain higher. In addition, merchandise attractively displayed in the air conditioned store retains both its eye appeal and sales appeal.

"PACKAGE UNITS" ... IDEAL SMALL INSTALLATIONS

Air conditioning equal in effect to that of a remote-control central system, such as would be used in large stores,

can readily be obtained in the small store by installation of one or more so-called "package units" placed directly in the area to be served.

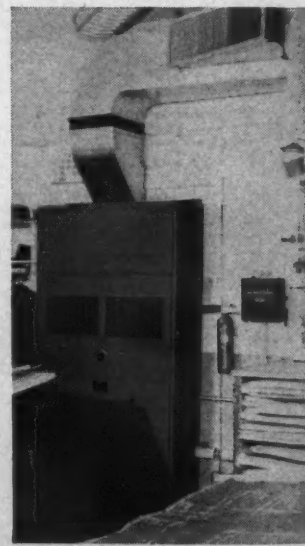
"Package units" are factory-assembled, self-contained and have complete refrigerating compressors and other components of their larger central-system counterparts. Such units are available in 3, 5, 7½ and 10-ton capacities and all are of dimensions that readily allow moving them through an average door of 36" width. A limited amount of ductwork, when required, may sometimes be fitted to the larger (10-ton) "package unit."

Recirculation of the condenser water for re-use is frequently a necessity because of high water costs or local restrictions on water usage and sewerage. A water-saving device, such as an evaporative condenser, is advisable in such cases unless there is no space available for it on the roof or elsewhere.

SIZE AND NUMBER OF UNITS

There is no entirely satisfactory "rule of thumb" method for determining the tonnage required per square foot in the small store. Because areas are smaller, the concentration of heat in some cases may be greater. For example, the coffee urns used by a single lunch counter may give off as much heat as the equipment used in a restaurant of fairly large size.

A typical small installation is that in Sisson's men's clothing store in Milwaukee, Wis. Two "package units" were installed for comfort cooling during summer months. A 3-ton unit was set up just inside the main entrance. Photo (on opposite page) shows how this unit is cleverly concealed by cabinet work that matches the interior-decoration treatment of the store. A short duct carries cooled



Compactness of the "package unit" allows placing it in almost any part of the store. Note short duct supplying conditioned air to adjacent area.

air to a ladies' suit shop directly above the unit.

The number of units required . . . be it one, two or three . . . depends upon economics, size of area to be air conditioned, and other factors such as unusual conditions of smoke and odors; the importance of comfort cooling for employees and patrons; conditions of merchandise, and whether or not the goods are perishable or exposed to dirt, dust or contamination.

Still another factor to consider is that equipment and installation costs are not in direct proportion to tonnage capacities. For instance, whereas two units, each of 3-ton capacity, may shorten the required blow, and slightly improve air distribution . . . still the electrical, water and drainage services, and heating coils are necessarily doubled in number and remain the same in size. Two such units may roughly cost \$3000, as opposed to one unit at, say, \$1800—not including ductwork.



Three-ton air conditioning "package unit" designed and constructed by The Trane Company, LaCrosse, Wis., occupies little space in smartly decorated men's store in downtown Milwaukee.

Ducts are generally omitted from small-store "package unit" installations (if suitable blow can be obtained) because of their disproportionate cost to the system as a whole. Ductwork for the 5-ton unit might approximate \$300; that for the two 3-ton units about double this amount.

The quantity of fresh air required varies with the average number of occupants of the store; whether or not smoking is permitted; and the infiltration of outside warm, dusty air, which must be offset or prevented by building up a slight internal air pressure within the conditioned space. Air infiltration becomes greater as windows and particularly doors increase in number and also as the structure itself ages.

An average store takes in from one-fourth to one-third fresh air at the unit intake . . . the balance being recirculated. As a rule, this quantity of fresh air will prevent infiltration and provide sufficient conditioned air for

comfort. It is not necessary that each unit in a store take in outside air. Some may only recirculate the used air as it is returned to the unit.

ADVANTAGES OF "PACKAGE UNITS"

Modern, well-built "package units" have distinct advantages for the small store. They are portable and may be readily relocated, if necessary, when stores are remodeled, expanded, or when the short-term lease holder moves to a different location. If several units are installed, it is often possible to use only one when the heat load or occupancy is light, or when only a small area of the store is to be occupied. In addition, "package units" can often supplement an existing central system when the plant itself cannot be increased either in capacity or air distribution.

When planning the installation for a small store, list the factors involved:

1. Size of store.
2. Nature of business.
3. Tonnage indicated.
4. Average occupancy.
5. Heat load.
6. Peak requirements.
7. Space available for equipment.
8. Source of air supply.
9. Re-use of water.
10. Permanency.
11. Initial cost.
12. Safety factors.

As Mr. Reynolds explained, "package units" are ideal for practically all types of small stores. These machines are compact, portable, easy to install, easy to operate and entirely safe. Most units are charged with "Freon" refrigerants. These are ideal for the purpose because they are safe . . . nonflammable; nonexplosive, virtually nontoxic, chemically pure and 100% dependable. In addition to conserving space and providing effective comfort cooling, the "package unit" is an attractive and quiet machine that delivers conditioned air most economically.

There are many makes available, and all of them are good. Some have special features that may best meet specific requirements. Almost every retail-store owner today is a prospect for air conditioning, and you can rest assured that your recommendation of the "package unit" type of equipment, operated with "Freon" safe refrigerants, will prove a profitable investment for your client. E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division, Wilmington 98, Delaware.



BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY "FREON" SAFE REFRIGERANTS



"Freon" is Du Pont's registered trade-mark for its fluorinated hydrocarbon refrigerants



G-E Fiberduct raceways provide single-, double-, or triple-duct service—can be laid in a variety of patterns to concentrate distribution over any portion of floor.



Large G-E Fiberduct raceways provide ample facilities for the heaviest electrical demands—permit installation of outlets right where they're needed in a few minutes.

Provide Complete Underfloor Distribution with nonmetallic G-E Fiberduct Raceways

Plan now to avoid materials problems and still provide ample underfloor distribution with nonmetallic G-E Fiberduct raceways.

G-E Fiberduct raceways offer the kind of over-all distribution that today's expanding electrical requirements demand. They put power where it's needed when new electrical equipment and changing floor layouts call for flexible distribution.

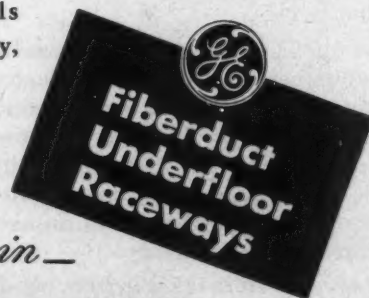
Fiberduct raceways make it easy to install additional outlets at all times. An electrician cuts a hole through the floor

and the duct, pulls wires through and installs the outlet. New distribution is provided by merely pulling additional wires through the raceway. There's no interruption of building facilities . . . no annoyance to building tenants!

Complete specifications and installation data are available from your General Electric Construction Materials distributor. For a free copy of the G-E Fiberduct Data Manual, write to Section C57-115, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.



To add an outlet, simply make a small opening in the floor over the raceway, fish wires through, connect outlet.



You can put your confidence in—
GENERAL  ELECTRIC

THE RECORD REPORTS

A.I.A. SPARKS INDUSTRY EFFORT TO CLARIFY CMP; DPA ADVISER ON BUILDING POLICY MAY BE SOUGHT

*Washington Round Table Called by Directors October 14-15
Debates Joint Proposals; Chamber Group Meets November 2*

THE American Institute of Architects took the lead last month in an intensive drive by all segments of the construction industry to "straighten out CMP."

Representatives of eight leading organizations in the building field held a round table in Washington October 14-15 at the invitation of the Institute's Board of Directors. There was a thorough airing of the confusions and inequities felt in all areas of building construction under the present operation of controls and agreement on the usefulness of joint representations to the office of Defense Chief Charles Wilson.

The meetings adjourned without issuing any formal recommendations; but discussions were to be continued at the November 2 meeting of the advisory committee of the Construction and Civic Development Department of the U.S. Chamber of Commerce. Most of the representatives at the A.I.A.-sponsored sessions are also members of the Chamber committee. Meanwhile, talks were planned by smaller groups.

Seek Equitable Allocations

The central problem — getting a more even break for building in allocation of critical materials — may be approached by a request for appointment of a policy adviser either in Mr. Wilson's office or in the office of DPA-NPA Administrator Manly Fleischmann. A.I.A. Executive Director Edmund Purves has been asked to prepare a statement outlining proposed functions for such an adviser. Frank R. Creedon, assistant administrator of the National Production Authority in charge of facilities and construction, can represent the industry in implementing stated policies; but the complaint is that there has been no representative for construction at the policy-making level.

Dissatisfaction with DPA and NPA methods of allocating controlled materials has stemmed from many aspects of the complicated operation. The home builders have been particularly vocal. They have said, for example, that minimum allowances for self-certification

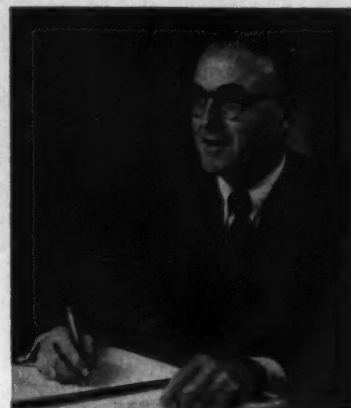
may be fair enough, but the imbalance appears in the allotments for Class B product manufacture. One industry source has referred to these allocations as "ridiculously low," providing metal for not more than 40 to 50 per cent of required products. Some have wondered if criteria for the division actually are related to building materials.

The large number of claimant agencies that get allotments from DPA for portioning out to their separate building programs is another aspect of controls operation that has been singled out for criticism as contributing to "confusion more pronounced" (one rueful nickname for CMP). There has also been considerable feeling that people without sufficient experience in construction are handling too much of the program.

The decision to spearhead a concerted effort for revision of present government policies was made at the semi-annual meeting of the Board of Directors of the A.I.A., held Sept. 30-Oct. 2 at Portland. The Board adopted a formal resolution to hold the two-day round table and endorsed the resolutions passed at the June meeting of the Middle Atlantic District and the New Jersey Chapter. These resolutions deplored the confusion caused in building by existing controls and urged national A.I.A. action to bring about clarification of the construction outlook.

Many Groups Take Part

The number and diversity of the industry groups which accepted the invitation to the A.I.A. round table provided testimony to the widespread protest against the unworkability of controls in their present form. Besides the A.I.A., these organizations were represented: American Society of Civil Engineers, Associated General Contractors of America, U.S. Chamber of Commerce, National Association of Home Builders, National Retail Lumber Dealers' Association, National Society of Professional Engineers and the Producers' Council.



JOSEPH B. MASON

JOINS RECORD STAFF AS EXECUTIVE EDITOR

JOSEPH B. MASON, for more than 20 years an active editor in the areas of building, architecture and engineering, has been named executive editor of ARCHITECTURAL RECORD.

Mr. Mason, a former editor-in-chief of *American Builder* and *Building Age*, has been a senior editor of *Good Housekeeping* Magazine and director of its Building Forum since 1945. His work for *Good Housekeeping* has included editing of special technical books on building.

Early experience of Mr. Mason included a stint for the Associated Press in Chicago and extensive writing for architectural publications for the Portland Cement Association. Before it was merged with *American Builder*, he was first technical editor and then — at the age of 26 — editor of *Building Age*. He subsequently became managing editor of the merged publication prior to his appointment as editor-in-chief.

Mr. Mason is a 1926 graduate of the University of Wisconsin, where he majored in engineering and journalism. He is a member of Sigma Delta Chi, honorary professional journalistic fraternity; the Architectural League of New York; the Columbia University Club; and the Columbia Faculty Club. He has lectured at Teachers College, Columbia, on architecture, engineering and the economics of housing.

"Joe," as he is known by his friends and acquaintances among architects and builders, assumed his new post on November 1.

"SHOPPERS' WORLD" AT FRAMINGHAM APPLIES NEW IDEAS

THE \$6,000,000 SHOPPING CENTER opened last month at Framingham, Mass., by Suburban Centers Trust of Boston may become a milestone in the evolution of a building type.

Location of the center, handling of the site and building design all were determined by the most advanced concepts of the function of the regional shopping center in an era of increasing decentralization (see ARCHITECTURAL RECORD, March 1951, pages 120-143).

"Shoppers' World," first of a series projected by Suburban Centers, has been built on a 70-acre site between two busy highways in a fast-growing community halfway between Boston and Worcester. It contains 44 shops (six more to come), sandwiched on two levels to cut walking distance, all under one roof, and all surrounding a 675 by 100

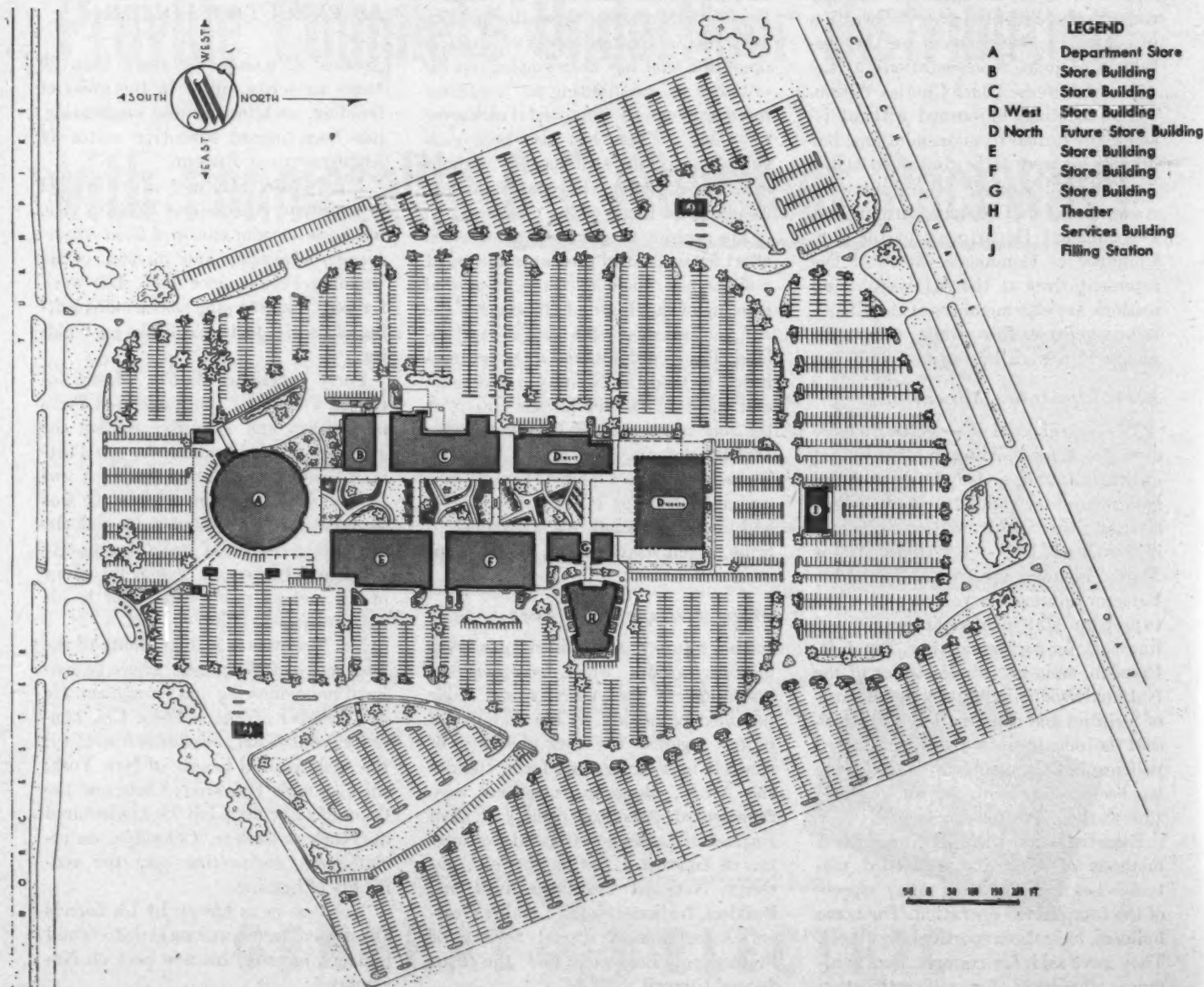
ft central mall. Covered walkways lead from a 6000-car parking area to the stores, and covered walkways also connect all units of the center. Three pedestrian bridges span the mall at the upper level. Within the shops ramps lead from one level to the other. Both levels are equally accessible from the parking area, which is midway between them.

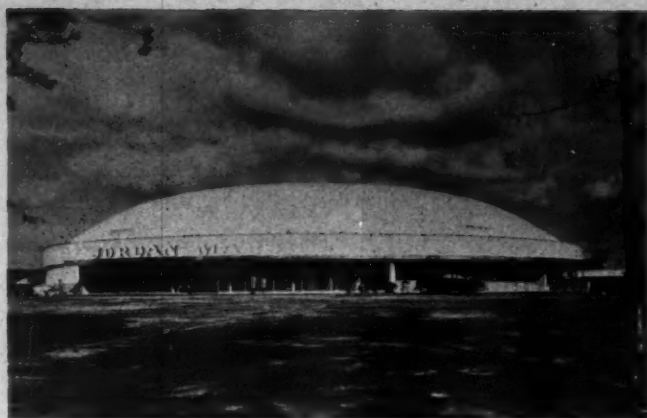
Market researchers, site planners and traffic engineers helped pick the site — on the most convenient side of the turnpike at the center of the third largest retail trading area within a 40-mile radius of any city in America. The purchasing power of families within a 29-minute driving distance of the center was analyzed to determine the number of stores such an area could support. The capacity of the parking area was fixed at 3.5 times the amount

of interior selling space, a ratio arrived at in terms of peak December needs. To cut shoppers' steps, the parking area surrounds the center; average walk from car to rampway is 100 ft.

Construction is steel and concrete, with exteriors of asbestos siding and — facing the mall — glass storefronts. All electrical, heating and plumbing services are centered in basement areas, for ease and cheapness of maintenance.

Ketchum, Gina and Sharp were the principal architects. Their collaborators in developing the design included Architect Kenneth C. Welch, Grand Rapids; Frederick J. Adams and John T. Howard, Boston; Anderson and Beckwith, Architects, Cambridge; and Arthur and Sidney Shurcliff, Landscape Architects, Boston. Severud, Kruger and Elsted were structural engineers.





Jordan Marsh Department Store has 175,000 sq ft, most of selling space beneath dome 227 ft wide, 54 ft high,

world's largest of steel arched beam construction, biggest in U.S. without interior supports. Its ceiling is suspended on

steel cables; walls are glass. Inside, four selling levels; no partitions. Theater (above) is planned to seat 1500



Central mall, one story below level of parking area, has been elaborately landscaped, given paths as well as walkways.

Shoppers will find benches to relax on,

outdoor art shows provided by Boston Institute of Contemporary Art to look at





Photo: Herman Ahrens, Pacific Builder and Engineer



Far Left: A.I.A. Chapter Presidents Clarence Wick, Portland; Paul Thiry, Seattle; Benjamin Ruehl, Spokane. Left: Dr. Clifford Barrett, Scripps College, presents first Valentine Kirby Fine Arts Award to Architect Ernest Born. Donald Kirby, who commissioned the award in memory of his father, and Mrs. Kirby are at right in photo

ATTENTION CENTERED ON PROSPECTS FOR BUILDING AT ARCHITECTS' CONFERENCES ACROSS THE NATION

PROSPECTS FOR BUILDING under the current system of government controls made a common denominator for discussions, both on and off the agenda, at the many architects' meetings across the country last month.

One seminar of the Northwest Regional Conference of the American Institute of Architects heard Lee M. Cannon of the National Production Authority's Seattle office; James M. Follin, chairman of the Defense Production Administration's Conservation Division subcommittee on building construction, addressed the annual convention of the California Council of Architects, held jointly with a meeting of the Sierra Nevada Region of the A.I.A.; and the need for united action by architects to persuade the government to revise the present controls setup was a major theme for National A.I.A. President Glenn Stanton in his address before the annual convention of the New York State Association of Architects at Buffalo.

Highlight of the Northwest conference was the decision of the delegates to organize a regional council and appointment of a committee of the chapter presidents to study ways and means.

Architectural exhibits and awards

were a major center of interest at the New York State meeting. Top award winners in their divisions were: Isadore Rosenfield, New York — North Shore Hospital, Manhasset, L. I.; Reisner & Urbahn, New York — Long Beach, L. I., junior High School; Cary & Curtis King, Sargent, Webster, Crenshaw & Folley, Syracuse — Pitcher Hill Elementary School, North Syracuse; Al & Dick's Restaurant, New York — George Nemeny & A. W. Geller, New York. Honorable Mentions were given to Moore & Hutchins, New York — Garden City, L. I., Village Hall; Kelly & Gruzen, New York — Signal Corps Barracks, Fort Monmouth, N. J.; Daniel Schwartzman, New York — Baltimore residence; Voorhees, Walker, Foley & Smith, New York — Charles Hayden Memorial Library, Massachusetts Institute of Technology.

Donald Q. Faragher, Rochester, was elected president of the Association. Other officers elected are Adolph Goldberg, New York, first vice president; G. Morton Wolfe, Buffalo, second vice president; Harry Prince, New York, third vice president; John W. Briggs, Rochester, secretary; and Maxwell A. Cantor, Brooklyn, treasurer.



New officers were elected by Vermont A.I.A. Chapter at its annual meeting October 7. Above: William W. Freeman, Burlington, secretary; Preston M. Cole, Woodstock, president; Payson Rex Webber, Rutland, vice president. Below: President Cole is congratulated by the outgoing president, Kenneth Reid, Dorset



Marschall Photos



At Buffalo: (far left) James W. Kideney, Buffalo, the Association's first president; Henry V. Murphy, Brooklyn, retiring president; C. Storrs Barrows, Rochester; Charles Rockwell Ellis, Syracuse; (seated) Matthew W. Del Gaudio, New York; Donald Faragher, Rochester, new Association head. (Left) Ontario Architects' president; Earl Sheppard; Glenn Stanton, A.I.A. president; and Mr. Murphy

How to Prevent Wet Concrete Floors

"High-heat capacity floors have a further undesirable feature in climates having abnormally high humidities, particularly in the summer. The concrete in contact with the ground is relatively cool, and frequently moisture condenses on the floor surface, damaging floor coverings.

"When the slab is insulated from the ground, its surface tends to follow air temperatures much more closely and is seldom below the temperature at which condensation begins to take place."

From "Progressive Architecture" research report: "Insulation for Concrete Floor Slabs on Grade."

Warmth in walls and ceilings flows to cold uninsulated floors, following nature's law that heat travels from warm to cold, in any direction, in conduction and radiation. The rate of radiation and absorption is over 90%. Furniture, even people, radiate heat to the colder floor, and also conduct heat down wherever they touch its colder surface.

The warmth absorbed by the floor flows down by conduction through solids to its colder under surface which radiates the heat wastefully to the ground at a rate exceeding 90%.

Multiple sheets of accordion aluminum underneath the floor reflect back 97% of radiation. The air spaces restrict heat flow by conduction to 5%. There is no such thing as convection downward. With practically no heat loss, the concrete "tends to follow air temperatures" and remains above dew-point.

Moreover, multiple accordion aluminum has zero vapor permeability. It remains permanently in place, is cheaply installed without the need of expensive support, and does not tear where stapled because it weighs but 1 oz. to the sq. ft. and is moisture-proof and non-condensation-forming.

INFRA THERMAL FACTORS, DOWNHEAT

Type 6	C.044 R22.72 = 9" Dry rockwool
Type 4	C.065 R15.38 = 6" Dry rockwool
Type 4 Jr.*	C.097 R10.30 = 4 1/8" Dry rockwool

*In 1" space.

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Please send FREE "Simplified Physics of Vapor and Thermal Insulation," new summer 1951 edition.

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TECHNIQUE FOR INSULATING CONCRETE FLOORS

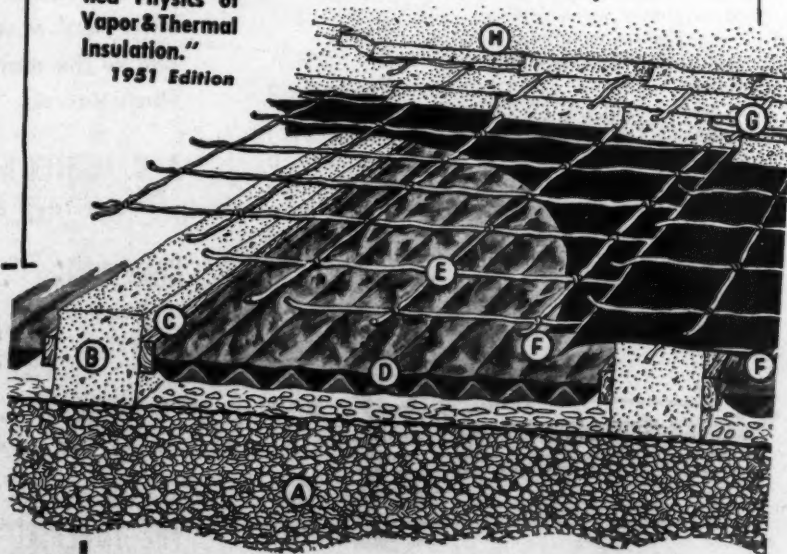
Installed over rolled gravel (A), for residences; over appropriate 4", 5", 6", etc. cement slab for factories, warehouses, hangars, etc.

(1) On 16" centers make appropriate forms for concrete joists (B), 3"x3", 4"x3", 4"x5" etc. (2) Pour concrete joists (3) After concrete sets semi-hard, (4) nail wood lattice or furring strips (C), (5) to sides of concrete joists and (6) staple Infra insulation (D) to them (7) with at least 1" space from top of concrete joist.

(8) Over concrete joists place asphalt-paper-backed welded wire mesh (E) (3"x3", or 3"x6", or 6"x6"), paper facing down, mesh facing up. (9) Lap at least 6" (F). (10) Mop lap with waterproofing to prevent concrete while liquid from leaking through. (11) Now lay down a plain welded wire mesh (G) 6"x6", No. 10 gauge, no paper attached. (12) Pour concrete (H) to desired thickness. While pouring concrete, lift free wire mesh with hooks a few inches.

NOTE: It is advisable to drive the nails through the furring strips before applying them to the concrete joists.

From "Simplified Physics of Vapor & Thermal Insulation,"
1951 Edition



Fine Flush Valves

—for a distributor's
own building

For complete information on Watrous Flush Valves write for catalog No. 449



Among Watrous Fine Features

Water-Saver Adjustment

All Watrous Flush Valves, both diaphragm and piston types, have an external adjustment for length of flush. Besides providing maximum water-savings, this feature can insure peak operating efficiency from every fixture, and makes it possible to maintain efficiency over the years despite inevitable wear or changing operating conditions.



Watrous

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BOTH DIAPHRAGM AND PISTON TYPES

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THE RECORD REPORTS

NEWS FROM WASHINGTON *by Ernest Mickel*

First Quarter 1952 Allotments Allow More Critical Materials For Industrial Construction, Less for Other Civilian Building; Crisis in School Building Looms; 41 "Critical Areas" Named; \$4 Billions Appropriated for Military Construction Program

AS THE CONSTRUCTION INDUSTRY prepared for a major effort to get a more equitable portion of the available supply of controlled materials for building construction (see page 11), the Defense Production Administration was painting a far from rosy picture of the immediate future.

DPA Administrator Manly Fleischmann, announcing first quarter 1952 allotments of steel, copper and aluminum to 20 claimant agencies outside the National Production Authority and 36 within it, said that first quarter direct military demands for steel are 408,000 tons more than in the fourth quarter 1951. The direct military demand for copper is 81,000,000 pounds more than in the fourth quarter, and for aluminum 80,000,000 pounds more.

In the individual breakdown, DPA allows the U. S. Office of Education 96,296 tons of steel, 3,897,000 pounds of copper and copper base alloy, and 10,000 pounds of aluminum for first quarter operations next year. This compares with 94,614 tons of steel—plus an additional allocation of 10,000 tons of structural steel—2,881,000 pounds of copper and 15,000 pounds of aluminum allowed schools for the fourth quarter this year.

The cut in the school allotment was less than in the steel allowance for hospitals. Where the U. S. Public Health Service got 71,299 tons of steel for the current quarter for hospital construction, it is given only 64,123 tons for the first quarter of 1952. Hospitals receive as a claimant agency 2583 pounds of copper and 400,000 pounds of aluminum in first quarter 1952 compared with 2,190,000 pounds of copper and 500,000 pounds of aluminum in the final quarter this year.

Building materials as a category in the Controlled Materials Plan operation of DPA will receive nearly 100,000 tons more of steel in the first quarter of 1952 than they did for operations during the fourth quarter of this year. The addi-

tional amount was allowed to provide products needed in construction, DPA said.

Building materials took a cut in aluminum, however, from 50,000,000 pounds in fourth quarter 1951 to 45,300,000 pounds in first quarter 1952. The story on copper followed the trend of the steel allocation, up from 45,900,000 pounds in the current quarter to an allotment of 51,850,000 pounds for the first quarter of next year.

In other allotments, General Services received 24,014 tons of steel, 640,000 pounds of copper and 100,000 pounds of aluminum; Housing & Home Finance Agency, 83,700 tons of steel, 5,978,000 pounds of copper and 250,000 pounds of aluminum. Allotments to NPA divisions included: construction machinery, 487,654 tons of steel, 7,220,000 pounds of copper, and 2,400,000 pounds of alumi-

num; and electrical equipment, 586,710 tons of steel, 147,169,000 pounds of copper and 24,250,000 pounds of aluminum.

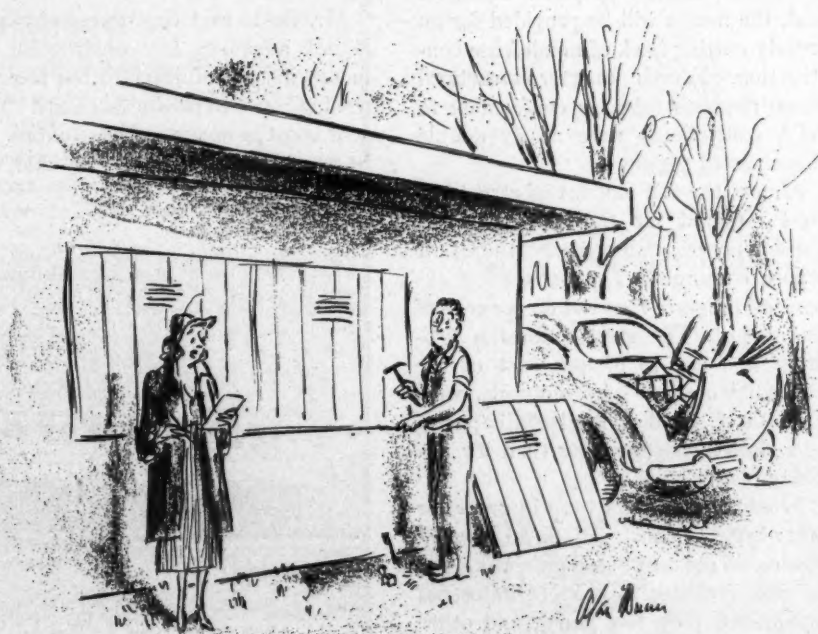
Mr. Fleischmann said more materials will be directed into the industrial expansion program in the first quarter of 1952 "in order to increase this nation's productive capacity so that present controls may be relaxed as soon as possible."

About 50,000 tons more structural steel has been authorized for this expansion in the first quarter than was provided in the fourth quarter, and Mr. Fleischmann noted that "this will force a slowing down in less-essential civilian building." An increase in supply of structural steel shapes of about 100,000 tons is expected in the first quarter.

Conservation Efforts Praised

Some compliments to architects and engineers were implied in the third quarterly report of Defense Mobilization Director Charles E. Wilson. The construction industry was cited in the report as showing probably the greatest amount of progress so far as conservation of critical materials is concerned. New designs are helping to eliminate waste of materials and to encourage the use of substitutes in essential uses. By the redesigning of certain types of structures, it has been shown that as much as 50 per cent of the steel ordinarily used can be saved. It has been shown that the

(Continued on page 18)



—Drawn for the RECORD by Alan Dunn

"Now drain the plumbing—then drain the pool—after that drain the water-cooled roof . . ."

THE RECORD REPORTS

WASHINGTON

(Continued from page 17)

use of structural steel in some instances has been eliminated altogether by substituting masonry, reinforced concrete, and even heavy timber.

The Wilson message had this to say on the point:

"Federal design and construction practices are now being surveyed from the standpoint of conservation. Building officials' organizations have offered their support to proposals that city councils authorize alternate designs and processes required by the national emergency, which will save copper as well as steel.

"In many instances during World War II, substitution and conservation were the only things that kept some industries and many companies going. The ingenuity displayed then will have to be shown again in order to meet our military needs and still keep the civilian economy well supplied with essential goods that can only be made in volume by using substitutes."

Mr. Wilson held that the extension of CMP to all new construction would be particularly useful since it would make it possible to direct the flow of structural steel shapes, especially tight, to the more essential projects. Thus, he said, the means will be provided for an orderly cutting back of nondefense construction. Fourth quarter structural shape requests (already conforming to NPA restrictions) were nearly double the expected supply.

Almost the full amount of structural steel required for the aluminum expansion program was granted, the ODM report continued. The ferro-alloy expansion program received 82 per cent of its request. The steel expansion program was cut to 51 per cent of the requested amount of structurals, with most of it specified for basic capacity and blast furnaces rather than for finishing plants.

Much sharper cuts were in order for other types of construction. An average of some 26 per cent of requests was given for new facilities to produce industrial equipment, pulp and paper, and other commodities needed by the military and the civilian economy. That was the story on division of supplies for the fourth quarter.

(Continued on page 22)



Max Fleet Photo

Murray Sklar was architect for factory and office building for Exclusive Upholstering Co., Ltd., Toronto. Construction is steel frame, floors are laminated wood

NEWS FROM CANADA by John Caulfield Smith

Steel Supply Is Critical Despite Production Boost

BAD NEWS FOR ARCHITECTS and builders not engaged in defense work was contained in a recent address before the Toronto Builders' Exchange by D. C. Beam, chief of the Construction Section Steel Division, Department of Defense Production.

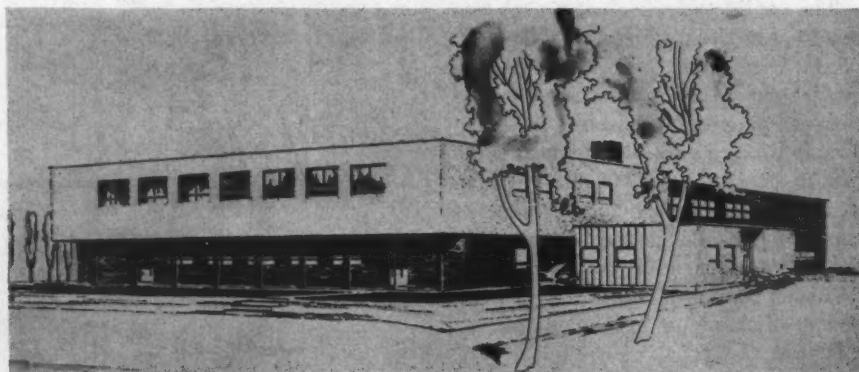
Mr. Beam said that the steel supply is not adequate for construction demands in spite of a five to ten per cent rise in Canadian production and a 30 per cent boost in imports. The situation will be worse before it is better, he said, and

alleviation of the shortage of plates and structurals is not likely until "after 1952."

What steel there is must be channeled to essential uses, Mr. Beam declared. Essential construction is classified as: 1. direct defense work; 2. expansion of basic industries; 3. expansion of defense-related industries.

There was no suggestion that present restrictions on steel usage would be extended, however; and Mr. Beam expressed the hope that it soon would be possible to give an essential rating to school and hospital buildings.

(Continued on page 270)



National Defense Photo

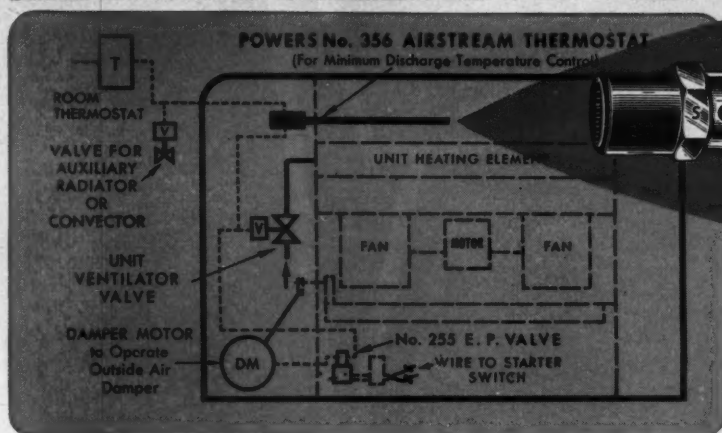
Rendering shows medium size drill hall, one of standard design being duplicated across Canada. W. E. Fancott, chief architect for Quartermaster-General Branch, Department of National Defense, is the architect. Much of current military construction is being assigned to private firms to design under supervision of Defense Construction Ltd.

Better PERFORMANCE — Greater COMFORT



from the
most accurate
**UNIT VENTILATOR
CONTROL**
of them all

POWERS



**No. 356 LOW-LIMIT
AIRSTREAM THERMOSTAT**

A precision non-waste type instrument requiring no auxiliary devices to supplement its accurate low limit control of unit ventilator discharge temperatures.

POWERS Features that Give Better Control with Less Maintenance

Since unit ventilators operate on minimum discharge temperature much of the time it is imperative that an accurate and dependable low limit thermostat be used.

- Powers 2-line non-waste Airstream Thermostats have a graduated dial for ease of adjustment—also Adjustable Sensitivity for precise control.
- With its ingenious non-waste double air valve mechanism there is no continuous waste of compressed air. It is not a "leakstar".
- Once set for the proper temperature a Powers No. 356 Thermostat requires no re-adjustment—there are no fine restrictions to be serviced.

Compare the performance of Powers unit ventilator control with others. You too will prefer its greater simplicity, accuracy and dependability. Benefits: More comfortable classrooms and less maintenance than with more complicated systems.

Write for Bulletin 301-AS

THE POWERS REGULATOR CO.

SKOKIE, ILLINOIS • Offices in Over 50 Cities

Chicago 13, Ill., 3819 N. Ashland Avenue • New York 17, N. Y., 231 East 46th Street
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POWERS ROOM
THERMOSTATS

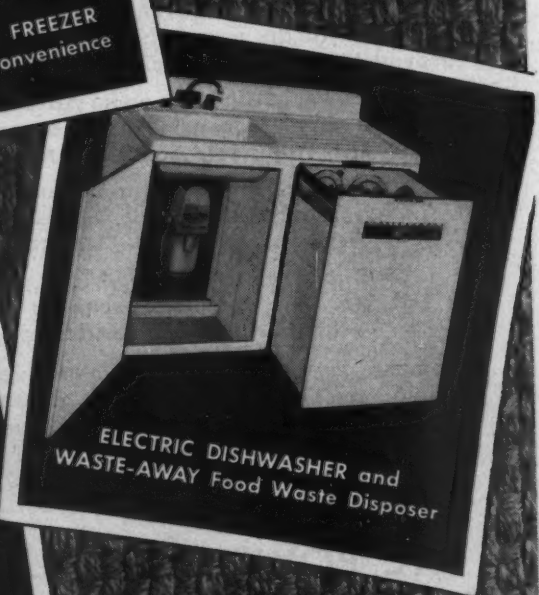
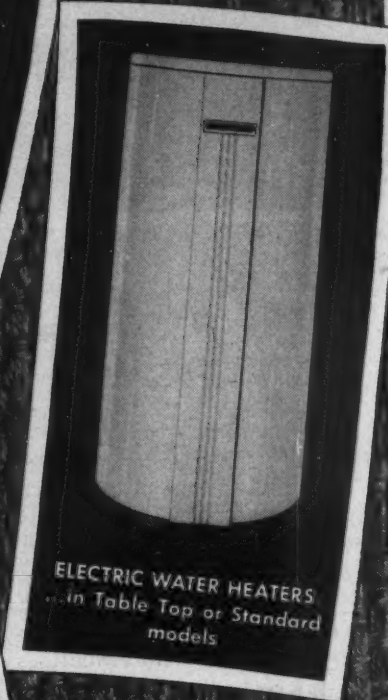
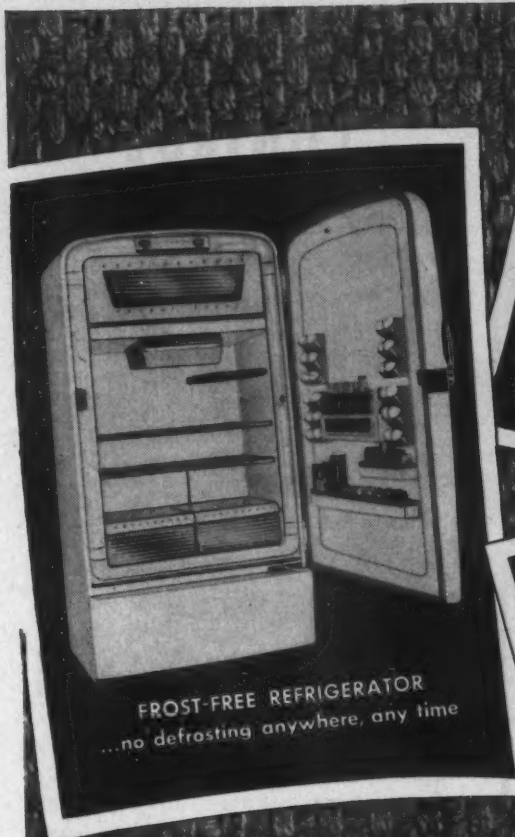


Above: Type D.
Left: Day-Nite Thermostat
with Automatic Changeover.



(a86)

Well Planned Home Economics



Laboratories at LOW COST

made possible by

WESTINGHOUSE SCHOOL PLAN

Teachers and School Boards insist that up-to-the-minute equipment in Home Ec. Laboratories is essential in teaching modern methods of home-making. Already more than 9,000 schools and colleges are providing the latest equipment, at reasonable cost, by taking advantage of the Westinghouse School Plan.

Under this plan, schools can buy the latest appliances . . . at a special low price for schools

. . . and have it replaced yearly with the newest models, *at no extra cost.*

In planning modern Home Ec. departments in schools, keep in mind the special advantages of the Westinghouse School plan . . . financially and to insure most efficient teaching methods. Listed below are the Westinghouse Appliances available under the plan. Consult any Westinghouse appliance distributor for complete details.



Refrigerators . . . Models from 6 to 10 cu. ft. with either all-across or vertical Freeze Chest. FROST-FREE and manually defrosted models. Large capacity in minimum floor space.

Upright Home Freezer . . . Front opening, 6 cu. ft. Home Freezer is twin to SC-8 or DC-7 Refrigerator. Reach-in convenience, plus Handy-Shelf inner doors. 213 lbs. capacity.

Ranges . . . Top-of-the-line and medium priced models with 40" platform. All important convenience features, plus Super-Speed Corox Unit that gets red hot in 30 seconds, Two-Level Speed Cooker and Color-Glance Controls. Rancho model has 38" platform, features tuck-away space for stool or utility table. Coronet with 21" platform is the answer where space is at a premium.

Laundromat Automatic Washers . . . Model L-5 has exclusive WEIGH-TO-SAVE Door and Water Saver for economical laundering of any size load. No bolting down necessary . . . no vibration. Requires standard 60-cycle, 110/120-volt, a-c outlet.

Electric Clothes Dryers . . . Model D-3 is twin to the Laundromat. Features Dry-Dial that shuts off Dryer automatically when clothes reach desired degree of dryness. Requires 230-volt, a-c current. Model D-3A plugs into standard 20-amp. outlet . . . has automatic Time Dial control. Both models have provision for venting, if desired.

Water Heaters* . . . Standard models in 30, 40, 52, 66 and 80-gallon capacities. Table-top models, ideal for kitchen installations, available in 30 or 40-gallon sizes. Single or double direct immersion heating elements. Tank-Guard provided where water conditions make extra corrosion protec-

tion desirable. Ten-Year Protection Policy against tank failure. No flue connections needed.

Automatic Dishwashers* . . . Exclusive Roll-Out Wash-Well. Holds more dishes, easier to load, thorough yet safe washing action. 3 models available: 48" Electric Sink with Waste-away Food Waste Disposer; 24" Dishwasher; Under Counter Dishwasher. Installation cost may be up to 50% less than most other makes.

Waste-Away® Food Waste Disposer* . . . gets rid of food waste in seconds. Shreds food . . . even bones . . . flushes down sink drain. Eliminates need for garbage cans or chutes. Can be installed in sinks having 3½" to 5½" drain openings.

Food Crafter Mixer . . . with power-plus for every mixing job. One speed setting for most recipes. Juicer and Food Chopper additional accessories.

Roaster-Oven . . . plugs into any a-c outlet. Portable. Cooks complete meal, roasts, bakes, cooks one-dish food for 50. Adds cooking facilities for classroom projects and quantity cooking capacity for school affairs.

WESTINGHOUSE ELECTRIC CORPORATION • Mansfield, Ohio

*Replacement is not made on built-in appliances which change only slightly from year to year.

. . . of course, it's electric!

See complete specifications on Westinghouse appliances in Sweet's Architectural File, Section ^{24a}WE

YOU CAN BE SURE... IF IT'S
Westinghouse

THE RECORD REPORTS

WASHINGTON (Cont. from p. 18)

Types of construction deemed less essential and more postponable, said Mr. Wilson, were cut back even more sharply. For example, commercial, social, and recreational construction received 12,000 tons of structural steel, only 11 per cent of stated requirements.

In other construction — public roads, schools, hospitals, food distribution

plants — Mr. Wilson noted that criteria of priority have been established to insure that limited quantities of structural steel move to the most essential needs. It was added that subject to conservation restrictions, materials for these purposes may be purchased without application to the government. Approximately 35,000 tons of structural

steel were set aside for these purposes in the fourth quarter, this section of the report concluded.

Still Needed: More Schools

The accumulating backlog of need for new school housing is worrying the U. S. Office of Education and the National Education Association of the U. S. alike. Officials in these organizations were hoping to see the construction industry make inroads on the tremendous backed-up requirements following World War II. The picture was beginning to clear when Korea came along and threw all previous schedules into a cocked hat.

The annual report of the education profession, just published by N.E.A. and entitled "Schools for Our Times," reiterates the basic problem: increasing enrollments call for additional space and facilities over and above the normal replacements required due to obsolescence and deterioration; the normal replacement needed is estimated at 15,000 classrooms per year and the increase in enrollment for the school year 1950-1951 created a need for 27,000 additional classrooms over replacements.

The chief worry in view of the materials shortages now stems from the prospect that mounting enrollments will continue during the next 10 years. N.E.A. estimates the increase in school population will require altogether the addition of 270,000 new classrooms to the current inventory.

Even now the accumulated need is placed by N.E.A. at 250,000 classrooms. Why has the backlog developed? N.E.A. lists several factors that have affected the situation for the past 20 years. The big depression retarded schoolhouse construction during the 1930's. In the World War II period, construction practically stopped because of the shortage of materials and labor. Immediately after the war, people waited for costs to go down.

Willard E. Givens, executive secretary of the N.E.A., author of the report, emphasized that school buildings must be regarded as more than mere shelter: "The school plant is a reflection of the educational desires, purposes, and ideals of the community in which it is located. It is a complex educational facility. Its design is the result of the combined thinking of parents, teachers, school board members, and an architect who has specialized in schoolhouse planning."

He listed six features of modern school building construction:

(Continued on page 26)

a tower of strength for 30 years and a tower of safety too!

Enclosed in 2/3 less space than is required for a typical exit stairway, (39 square feet as compared to 108 square feet) Potter Safety Slides will evacuate 300% more people—faster.

The Potter Slide is the **one positive factor in panic**. It is built for the emergency when nothing matters but life itself.

The Potter Slide Escape listed by the Underwriters Laboratories as standard, offers in multi-storied buildings, the fastest means of evacuation for the lowest initial cost and the lowest maintenance cost. It has no equal for evacuating schools, hospitals, institutions, industrial plants and public buildings.

Plan to incorporate this modern emergency escape, with a 30 year record of successful use, in your next project.

Potter Slide Escapes may also be installed economically on the exterior of old buildings.

Send the coupon below for full information. See our catalog in Sweets.

● Down 21 stories in two minutes in a Potter Safety Slide. "A man running at full speed down the stairs took 7 minutes."

POTTER FIRE ESCAPE CO.
We make this product only.

POTTER FIRE ESCAPE CO.
6107 N. California Ave.
CHICAGO 45, ILLINOIS

Gentlemen:

Please send us specifications and details of the Potter Slide Escape for both exterior and interior installation.

Name _____

Address _____

City _____

State _____

A FEDERAL ROOF IS A *Good* ROOF.

Good
FOR A
LIFETIME
!

R. R. Donnelley & Sons, Co., Chicago, with over 31,000 sq. ft. of Federal-Featherweight Precast Channel Roof Slabs, Archt. Albert Kahn Associated Architects & Engineers, Inc., Detroit; Contr. Peter Hamlin Constr. Co., Chicago.

*Because of the
Lasting Strength of*
FEDERAL-
Featherweight

STRUCTURAL CONCRETE

PRECAST ROOF SLABS

A roof deck is not purchased for today or tomorrow, but for the *lifetime* of the building. What will the cost record show fifty years hence—after all entries are in—will there be painting, repairs, replacements?

Once you decide on FEDERAL-Featherweight **STRUCTURAL CONCRETE PRECAST ROOF SLABS**, your client can tear up his cost sheet on the roof deck, because there will never be any need for maintenance entries of any kind.

These slabs are proof positive against all effects of weather, heat, smoke, cinders, steam, fumes, or moisture inside or outside the building. Nothing can detract from their sound structural strength and long life. There is no rot, no rust, no disintegration.

Illinois Institute of Technology, Chicago, Chemistry Bldg. & Chemical & Metallurgy Bldg., with a total of 36,500 sq. ft. of Federal-Featherweight Precast Concrete Roof Slabs., Archt. L. Mies van der Rohe, Chicago; Contr. Dahl-Stedman Co., Chicago, Assoc. Archt. Chemistry Bldg., Friedman, Alschuler & Sincere, Chicago, Assoc. Archt. Chem. & Met. Bldg. Holabird & Root & Burgee, Chicago.

ANY BUILDING—
INDUSTRIAL OR
INSTITUTIONAL —
IS A BETTER
BUILDING WITH
A FEDERAL ROOF!

CATALOG
ON REQUEST



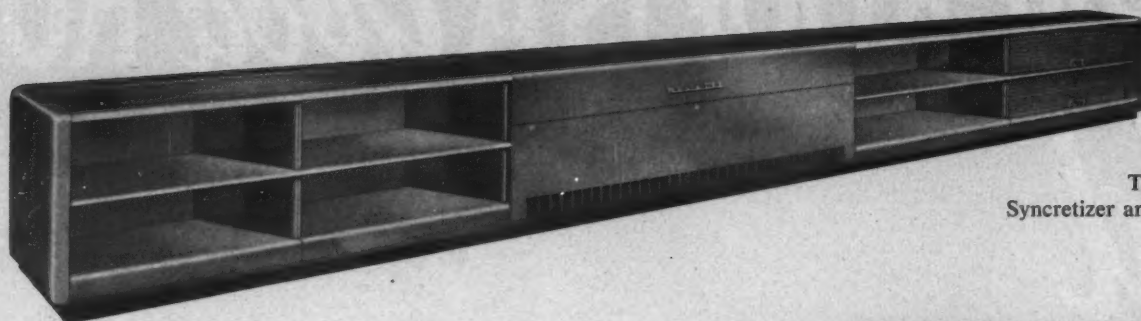
MADE, LAID AND GUARANTEED BY

FEDERAL CEMENT TILE COMPANY

EXECUTIVE OFFICES: 608 SOUTH DEARBORN STREET • CHICAGO 5, ILL.

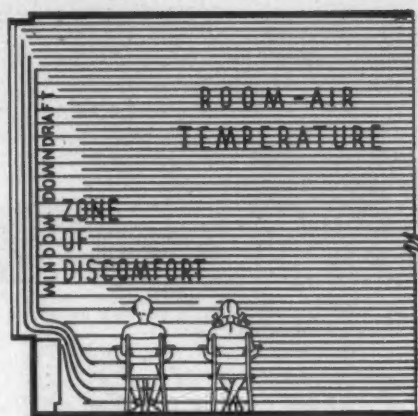
FOR FORTY-FIVE YEARS

SALES OFFICES IN PRINCIPAL CITIES

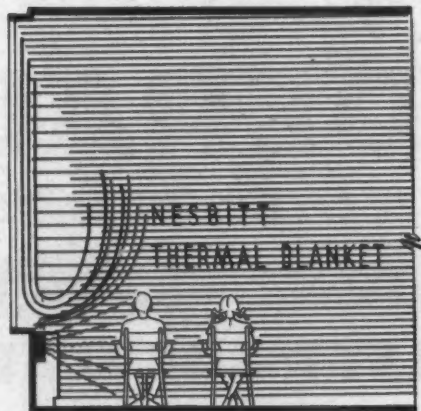


The Nesbitt Package
Syncretizer and Storage Cabinets

The Story of THERMAL



With room-air temperature evenly maintained, downdraft from large cold windows may remain the robber of comfort.



Nesbitt Syncretizer and Wind-o-line temper the downdraft, raise it out of impression range, and improve thermal balance.

THE POSITIVE ANSWER
TO WINDOW DOWNDRAFT

Nesbitt
SYNCRETIZER with WIND-O-LINE

THE STORY of classroom heating and ventilating began many years ago with the need for artificial heat in a one-room schoolhouse. A potbellied stove provided the heat.

With multi-room schools came central heat and hot-air, then steam-radiator distribution. Schoolrooms soon became so hot that the need for regular ventilation was recognized.

NESBITT became a character in the story in 1917 with a schoolroom unit that introduced outdoor air and heated air on the bypass principle.

The story progressed as knowledge increased. The *heating* effect of room occupants, electric lights, and the sun's rays became better known. The need for *cooling* during a large part of the classroom day hastened the development of heating and ventilating units.

Room-air temperature was the recognized index of comfort. But the widely divergent temperatures of the unit ventilator's air stream created conflict—*drafts*. NESBITT brought the air stream under separate control—syncretized, or harmonized, its temperature within draftless limits to that of the room air. Syncretized Air, a new standard of thermal comfort, was created—but air temperature remained its popular index.

Comfort Can Now Be "Seen"

Today thermal comfort has another dimension. Besides *air temperature*, we consider the *radiant temperature differential* of the surrounding walls and surfaces of the classroom. The temperature especially of large windows in cold weather is so far below the room-air

temperature that it soaks up the body heat of pupils sitting near it and, to a degree, of all others whose bodies can "see" it (are exposed to it). This explains why the comfort *impression* of some pupils is poor even when the air temperature is good—according to the room thermostat.

The Nesbitt Comfort Control

Within the Nesbitt Syncretizer heating and ventilating unit is the Comfort Control which "sees" and "feels" the outdoor air temperature at all times. This control automatically adjusts the temperature of the unit's continuous air stream so as to impose a protective thermal blanket—warm enough to shield room occupants from the chilling effect of cold windows, and cool enough to prevent overheating of the room air.

Wind-o-line Radiation

For conditions of large glass area and extremely cold outdoor air—which accelerate the problem of window downdraft, Nesbitt provides Wind-o-line Radiation for integration with the Syncretizer. Wind-o-line consists of fin-and-tube radiation in a grilled wall-hung casing to extend from both ends of the ventilating unit for the full length of the windows, at the sill line—and continued, if required, along cold outside walls. (Or it may be had as a component of the storage cabinets in installations of The Nesbitt Package.)

Unlike the attempts to draw off window downdraft as recirculated air—which are easily proved to be ineffective

**Like all good stories
this one has conflict...solution...
and a happy ending**

(READING TIME: Four minutes—and worth it.)

COMFORT in the Schoolroom

—Nesbitt Wind-o-line solves the problem of *heat loss* logically with a *heat gain* where and when needed. Convected currents of warm air from the grille temper the cold downdraft and divert its flow upward and above the heads of the room occupants. Radiation from the casing or cabinet helps to balance the radiant temperature differential.

"Happily ever after"

For school officials, architects and engineers who have a personal interest

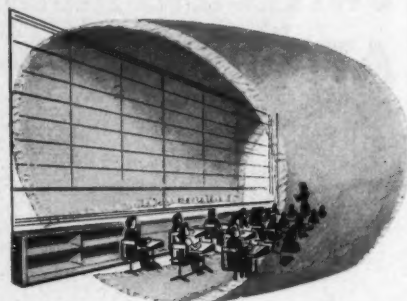
in Thermal Comfort the story turns out well: NESBITT SYNCRETIZED AIR—with Wind-o-line Radiation where desired—a *symmetrical* environment in which room-air and surface temperatures are better related to bodily heat exchange for a classroom comfort unequalled by any other system.

This is the story up to now. If it is ever to have a sequel, NESBITT expects to write it!

JOHN J. NESBITT, INC., STATE ROAD & RHAWN STREET, PHILADELPHIA 36, PA.



In very cold weather large window areas become a "wall-of-ice" in the classroom.



The Nesbitt "thermal blanket" protects pupils from the cold window downdraft.

A cut-away view of Wind-o-line Radiation, and photograph of a typical installation.



**The Nesbitt Syncretizer,
Wind-o-line Radiation, and
The Nesbitt Package are
made and sold by John J.
Nesbitt, Inc.; sold by Amer-
ican Blower Corporation.**

MAIL THIS COUPON FOR MORE FACTS

JOHN J. NESBITT, INC.
State Rd. & Rhawn St., Philadelphia 36, Pa.
Please send me publications describing the Nesbitt
Syncretizer and Wind-o-line Radiation.
Name _____
Address _____
City _____ Zone _____ State _____

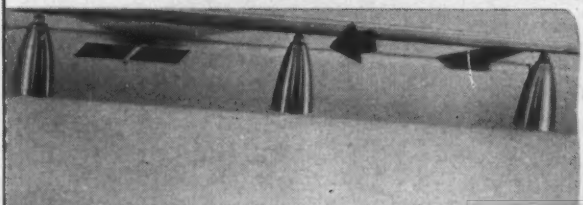
THE RECORD REPORTS

WASHINGTON (Cont. from p. 22)

1. Classrooms are larger. Larger sites provide more outside play area.
2. Classrooms have become more homelike and livable. Furniture is movable. Plastic floor covering and colorful paints have brightened the floors and walls.
3. Buildings are more flexible. Many interior walls can be moved without difficulty.

4. The use of glass brick, larger windows and bilateral lighting admits more light.
5. Buildings are designed for adult use and as community educational centers.
6. One story buildings are most common. Multi-story buildings are seldom constructed except in densely populated communities where space is limited.

SWIVELIER BLACKBOARD LIGHTING AT THE HEAD OF ITS CLASS!



SWIVELIER Universally Adjustable Lighting Systems—Tested, Proven and Specified by Leading Architects and Educators.

CARL ALLEN, SCHOOL LIGHTING SPECIALIST
OF GENERAL ELECTRIC, Mel Park Writes

"As you know we have recently installed experimentally six of your Swivelier housing Catalog No. M721 in our demonstration classroom of our Lighting Institute. Your equipment provided an easy, neat and relatively inexpensive way of accomplishing the desired results."

OF BRIGHTNESS
REFLECTANCE
F₁L = F₂L X R

Take the "Black" out of Blackboard—Light Up With SWIVELIER SWIVELIER Fixtures feature the famous Spring Tension Socket— that "STAYS PUT . . . AT ANY ANGLE," Will Not Work Loose!

SWIVELIER CAT. NO. M721 on WIREHOLD 2100 RACEWAY (Above)

MANY OTHER SCHOOL LIGHTING APPLICATIONS

Hundreds of SWIVELIER modern lighting fixtures available to meet school lighting problems. Write for free catalog.

Pratt Institute N.Y.C.

LOOK FOR THE SWIVELIER TRADEMARK!

SWIVELIER COMPANY, Inc., Dept. AR2
30 IRVING PLACE, NEW YORK 3, N. Y.

N.E.A. estimates that the half million new elementary and secondary school classrooms needed during the 1950's would cost in the neighborhood of \$13.5 billion. The total estimated school outlay for 1950-1951 is placed at \$6 billion, a sum which will bring only \$3 billion worth of service and supplies in prewar money. In 1949, total expenditures for public schools, including current expenses and new buildings, were approximately \$5 billion.

N.E.A. contends the nation can build and pay for better schools if it wants to. These figures are cited: in 1939, we spent \$2289 million for all the costs of the public schools. In the same year we spent \$1821.4 million for tobacco; \$3425 million for alcoholic beverages; and \$821.5 million for admissions to amusements. In other words, for the luxuries we spent more than two and one half times as much as we spent for public schools.

Mr. Givens comments: "A people who expend for three luxury items in one year nearly three times the cost of schools are not straining themselves to support education."

41 Areas Listed as "Critical"

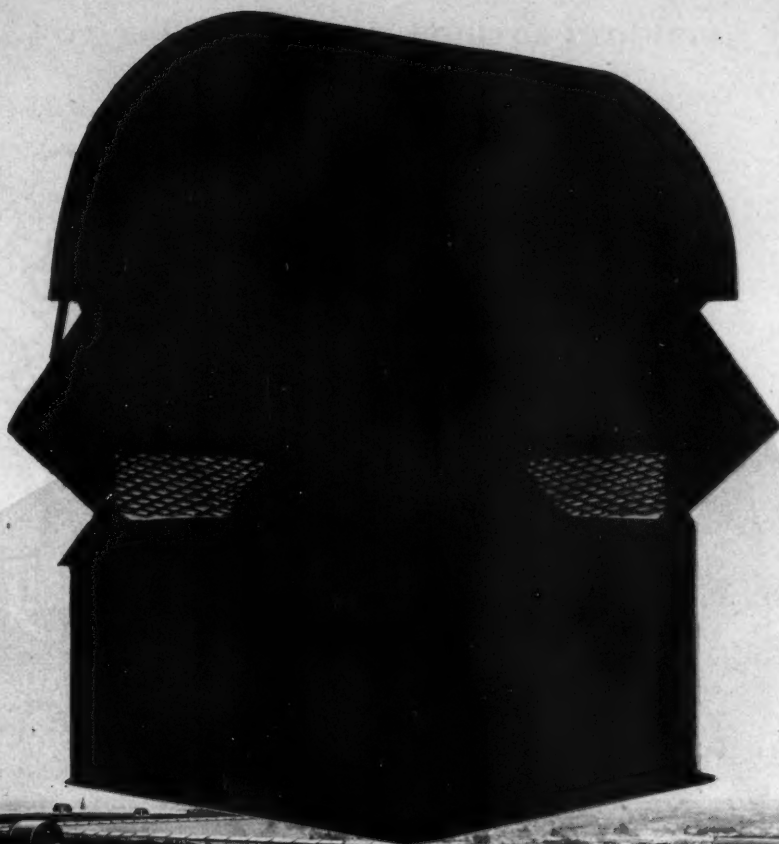
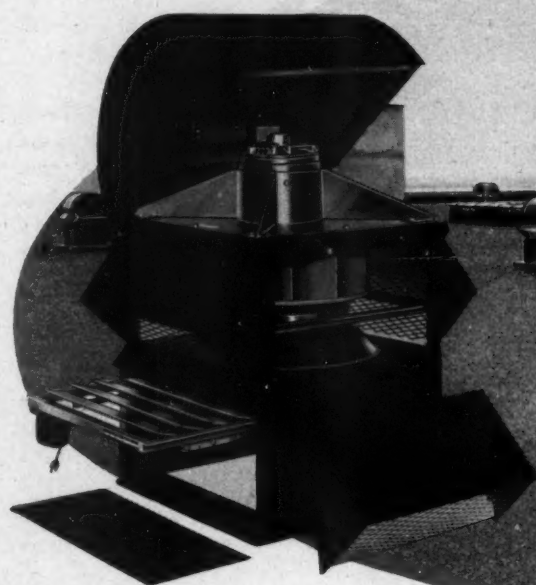
Early last month the Office of Defense Mobilization and the Housing and Home Finance Agency set up their criteria for handling the designation of critical areas under the Defense Production Act as amended and under the new housing and community facilities law. This was important, particularly in regard to the defense housing application, because it opened the door to the several government aid stimulants furnished in the defense housing measure. These included, in addition to the relaxation of credit restrictions on new housing, the liberalized mortgage insurance for programmed defense housing, aid to the communities in provision of essential community facilities and services, and a limited amount of federally-constructed housing to supplement the local shelter supply.

At the time the new plans were announced, 41 areas were determined to be critical defense housing areas to which Public Law 139, the new defense housing and community facilities act, would apply. The list included 33 previously designated by HHFA and the Federal Reserve System for relaxation of credit restrictions.

Wherever housing already had been programmed, the benefits of the new

(Continued on page 29)

It's the ILG "PRV"
for vertical flues
or duct systems



Eleven ILG Model "PRV"
Power Roof Ventilators
(Centrifugal Fan Type)
recently installed on
fourteen-story building
in New Orleans.

**New, improved
power roof ventilator**

• If you haven't given consideration as yet to this new ILG Model "PRV" Power Roof Ventilator for tough ventilating applications, you are missing the biggest development in years! Architects and engineers have given the unit a rousing welcome... they tell us it has every desirable feature for positive, controlled ventilation, independent of wind and weather conditions. They like the design—a complete ventilating unit consisting of a self-cooled motor direct-connected to a non-overloading, backward curved wheel, plus a selection of air control accessories in a single, weathertight housing. They approve its rugged construction, its precision manufacture. They find the sizes are right to give exceptional air deliveries over a wide range of pressures (free air to 1½" SP). And they bank on ILG's "One-Name-Plate" Guarantee. To get the complete story, call nearby Branch Office (consult classified directory) or send coupon today.



VENTILATION

Free! New engineering data bulletin No. 1901 gives you the complete story—features, sizes, capacities, dimensions. Send coupon now!

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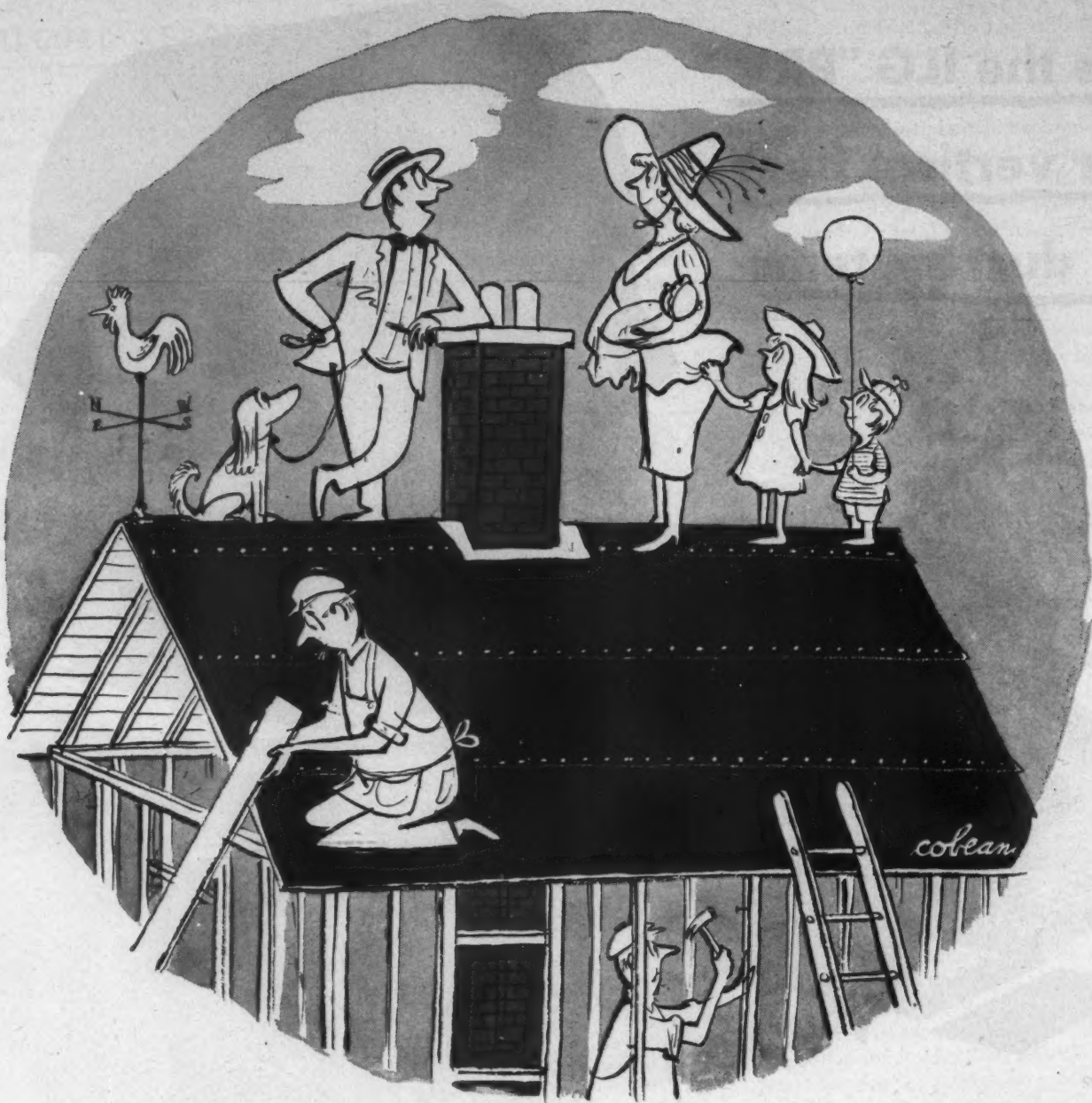
Firm Name _____

Individual _____ Title _____

Address _____ Zone _____

City _____ State _____





—and for help with the temperature control, the architect talked to Honeywell!

It's plain to see cartoonist Sam Cobean's wacky characters have their own ideas on how to inspect a home.

But in *one* thing, at least, they're like everyone else—they place a high value on comfort. Moreover, they know you can't have real comfort without proper temperature control. And they're happy Honeywell was consulted on that.

Honeywell *can* help architects and their heating engineers provide the proper thermal environment for any client—anywhere—in any kind of structure. We have a lot of well informed control engineers—

in our 91 different offices—who are experienced in doing just that. And we have a lot of literature that's yours for the asking—on the automatic control of heating, ventilating and air conditioning.

So, why not *talk* to Honeywell? Why not *write* to Honeywell about *your* control problem? And why not do it *now*?

For more information on how the Honeywell organization can help you solve your control problems, see the column across the page.

MINNEAPOLIS
Honeywell



First in Controls

THE RECORD REPORTS

WASHINGTON

(Continued from page 26)

law with regard to prior commitments by the Federal National Mortgage Association became immediately available. It would be applied in additional critical areas as soon as housing was programmed there. FNMA can make prior commitments to the extent authorized by Congress for purchase of mortgages on dwellings already programmed by the HHFA.

The full list of areas designated for both relaxation of credit restrictions and for such aids as will be available under the Defense Housing and Community Facilities and Services Act is as follows:

AEC, Savannah River Installation, S. C. and Ga.; Paducah, Ky.; Arco, Blackfoot, Idaho Falls, Idaho; San Diego and Oceanside, Calif.; Davenport, Ia., and Rock Island, E. Moline, and Moline, Ill.; Brazoria County, Texas; Colorado Springs, Col.; Fort Leonard Wood, Rolla, Mo.; Las Cruces, N. M.; Wright-Patterson Air Force Base, Dayton, Ohio; Solano County, Calif.; Starlake, N. Y.; Lone Star, Texas; Norfolk-Portsmouth, Va.; Borger, Texas; Wichita, Kansas; Camp Cooke-Camp Roberts, Calif.; Tooele, Utah; Dover, Del.; Imperial County, Calif.

Also Bremerton, Wash.; Camp LeJeune, N. C.; Sampson Air Force Base, N. Y.; Mineral Wells-Weatherford, Texas; Barstow, Calif.; Alamogordo, N. M.; Hanford-Kennewick-Pasco, Wash.; Patuxent, Md.; Valdosta, Ga.; Columbus, Ind.; Florence-Killeen, Texas; Huntsville, Ala.; Lancaster, Calif.; Indianapolis, Ind.; Sidney, Neb.; Wichita Falls, Texas; Bucks County, Pa.; Sanford, Fla.; Kingsville, Texas; Presque Isle-Limestone, Maine; Newport News, Va.

The agencies determine critical defense housing areas only if:

1. A new defense plant or installation has been or is to be provided, or an existing one reactivated or its operation substantially expanded.
2. Substantial in-migration of defense workers or military personnel is required to carry out activities at such defense plants or installations.
3. A substantial shortage of housing for such defense workers or military personnel exists or impends which impedes

(Continued on page 30)

For help with any control problem, talk to **Honeywell**



Consult your nationwide "Honeywell Staff"

In planning schools, factories, offices and other large buildings no doubt you often run into this problem:

What's the best way to get coordinated technical help with a multitude of control systems—for temperature, ventilation, air conditioning, refrigeration, industrial process?

The answer is simple:

Call in your local Honeywell representative.

He can give you unbiased advice on equipment, because he has a complete line of controls—pneumatic, electric, electronic. And to help you meet special problems, he can bring in specialists from 91 Honeywell offices.

When you *standardize on Honeywell*, all control applications can be treated as one project. And you'll be designing an integrated system that can be serviced simply by consulting one company. The Honeywell service organization—with its wide scope and flexibility—is positive assurance that your controls will perform efficiently for a lifetime.

So plan to standardize on Honeywell. And call in our local representative often. He's the key man on your nationwide "Honeywell Staff."



Send for your personalized cartoon

... and for help with the temperature control, we'll talk to (your firm name).

For your personalized, free 8½" x 9" reproduction of this Cobean cartoon, write to Honeywell, Dept. AR-11-207, Minneapolis 8, Minnesota.

Honeywell

First in Controls



HERE'S HOW TO PREVENT COSTLY FALLING ACCIDENTS



37 Falling Accidents
Every Hour*

A.W. ALGRIP ABRASIVE ROLLED STEEL FLOOR PLATE

This revolutionary ABRASIVE Floor Plate makes it possible for you to give your workmen the best non-slip protection against costly falling accidents.

A. W. ALGRIP is made by rolling abrasive grain, the same type used in grinding wheels, uniformly as an integral part of the upper portion of steel plate. Result: A floor plate that's non-slip even on steep inclines. ALGRIP requires no maintenance attention and wear exposes new abrasive particles so it keeps its gripping qualities. Wet or dry ALGRIP is non-slip. It's easy to keep clean and can be cut and installed overnight.

Architects, engineers, designers and safety engineers are specifying A. W. ALGRIP for industrial and commercial applications. Get complete information about this revolutionary ABRASIVE Floor Plate now. Write for booklet B-20

THERE'S NEVER A SLIP

ON A. W. ALGRIP.



ALGRIP installed in elevators and on sills keeps passengers safe from slipping accidents.



ALGRIP is ideal for installation on engine and boiler room floors.

A.W. ALGRIP ABRASIVE ROLLED STEEL FLOOR PLATE ALAN WOOD STEEL COMPANY

CONSHOHOCKEN, PA.

125 YEARS OF IRON AND STEEL MAKING EXPERIENCE

Gentlemen:

Please send me your 8-page information-packed booklet B-20.

NAME _____

TITLE _____

COMPANY _____

ADDRESS _____

CITY _____

ZONE _____

STATE _____

Other Products:
PERMACLAD Stainless
Clad Steel • A.W.
SUPER-DIAMOND Floor
Plate • Plates • Sheets
• Strip • Alloy and
Special Grades

*17% of the 222 occupational injuries which occur every hour are due to falls. Source: National Safety Council's 1949 edition of Accident Facts.

THE RECORD REPORTS

WASHINGTON

(Continued from page 29)

or threatens to impede activities at such plant or installation, or community facilities or services required for such defense workers or military personnel are not available or are insufficient, or both.

What Makes a Critical Area?

Before his resignation as chairman of the Critical Areas Committee of the Defense Production Administration, Ralph R. Kaul explained the major steps taken in determining whether communities meet criteria set by the defense housing law.

Step 1 — The Critical Areas Committee asks the DPA, National Production Authority, Atomic Energy Commission, or other agencies concerned with activities in a community, to present findings on expected manpower requirements.

Step 2 — The Labor Department then investigates these manpower requirements to determine what part can be met by using more women workers, by making improvements in working conditions, or by other measures for increasing the labor supply needed in the area.

Step 3 — The agencies concerned with housing and rental situations, community facilities and services, then appraise the need for additional housing, rent control and community resources required for an expanded population.

The results are reviewed by the committee and if it decides that all criteria for designation as a critical defense area have been met, it so certifies to the Defense Production Administrator. If he, in turn, concurs, he formally notifies the Secretary of Defense and the Defense Mobilization Director. If they concur, the area then is designated as critical and is subject to provisions of both the Defense Production Act as to rent control and relaxation of credit curbs, and of the defense housing law as to housing and community facilities.

B. T. Fitzpatrick, deputy administrator and general counsel for the HHFA, recently estimated that under the new housing law approximately 800 localities would come under consideration for designation as defense areas. About 600 of these actually would be given serious study, he indicated, and some 400 of them certified. The military alone had a list of 326 individual cities.

(Continued on page 32)



Exceptional freedom in the development of flooring effects is provided by Armstrong's Linoleum. There are six distinct types—Plain, Jaspé, Marbelle®, Embossed, Spatter, and Straight Line Inlaid. No other flooring material offers such a variety of beautiful design and style effects, such a complete range of colors.

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Hutchinson Public Library, Hutchinson, Kansas
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ARMSTRONG'S LINOLEUM
ARMSTRONG CORK COMPANY • LANCASTER, PENNSYLVANIA

THE RECORD REPORTS

Of the 326 localities recommended by the Defense Department for certification, 92 at the time had insurance in force on housing mortgages under terms of the Wherry Housing Act, or had commitments under it outstanding, appraisals or eligibility statements in order, or requests in process.

The following exchange during hearings on the second supplemental appro-

WASHINGTON (Cont. from p. 30)

priations bill for fiscal 1952 gives an indication that the federal housing officials have not changed their sights for the calendar year 1952 regarding housing volume:

Rep. Albert Thomas (Tex.), chairman: How many starts and completions did the industry make in 1951? What is your best estimate?

Mr. Fitzpatrick: I think the indica-

tions at this point are, Mr. Chairman, that the rate of construction for 1951 will exceed the 850,000 which it was indicated earlier in the year we hoped to hold to. There is substantial prospect that it might reach as high as one million.

Mr. Thomas: I saw some article to that effect . . . and it seems that it was quite surprising to all the home builders as well as FHA. What was that figure for 1950? That was the peak year of construction.

FHA Commissioner Franklin D. Richards: One million three hundred and fifty thousand, approximately.

Mr. Thomas: And your plan for 1951 was in the neighborhood of 800,000 to 850,000; is that correct?

Mr. Richards: Yes, sir.

Mr. Thomas: As far as you can tell from a material basis, manpower and credit regulation, the industry will turn out that same number, between 800,000 and 850,000, during the calendar year 1952. Is that a correct summary of it?

Mr. Richards: That is right.

\$4,128,000,000 for Building

The Congress was not too severe with the military in handling its requests for public works construction funds. The cuts began in the House Appropriations Committee where the original asking for \$4,555,594,158 was trimmed to \$4,198,523,208, a reduction of \$357,070,950. The Air Force took the brunt of this recommended slash, suffering a cutback of \$291,327,450 from its original estimate of \$2,403,500,000. But it could well afford this, having been put down for the lion's share in both the authorization and appropriation measures. The House group recommended \$927,024,460 for the Navy, and \$1,159,326,198 for the Army's military construction program.

In the end the Congress appropriated \$4,128,000,000 for the military construction program—the measure was one of the money bills passed in the last hectic hours before final adjournment of the first session of the 82nd Congress on October 20. The session ended nearly three weeks after the original adjournment target date of October 1.

The legislation authorizing the huge military construction program of the three services, the largest single package of its kind in history, was enacted earlier. This called for some \$6.8 billion worth of construction all over the world. It was estimated about \$1 billion would be spent in establishing overseas airfields.

(Continued on page 238)

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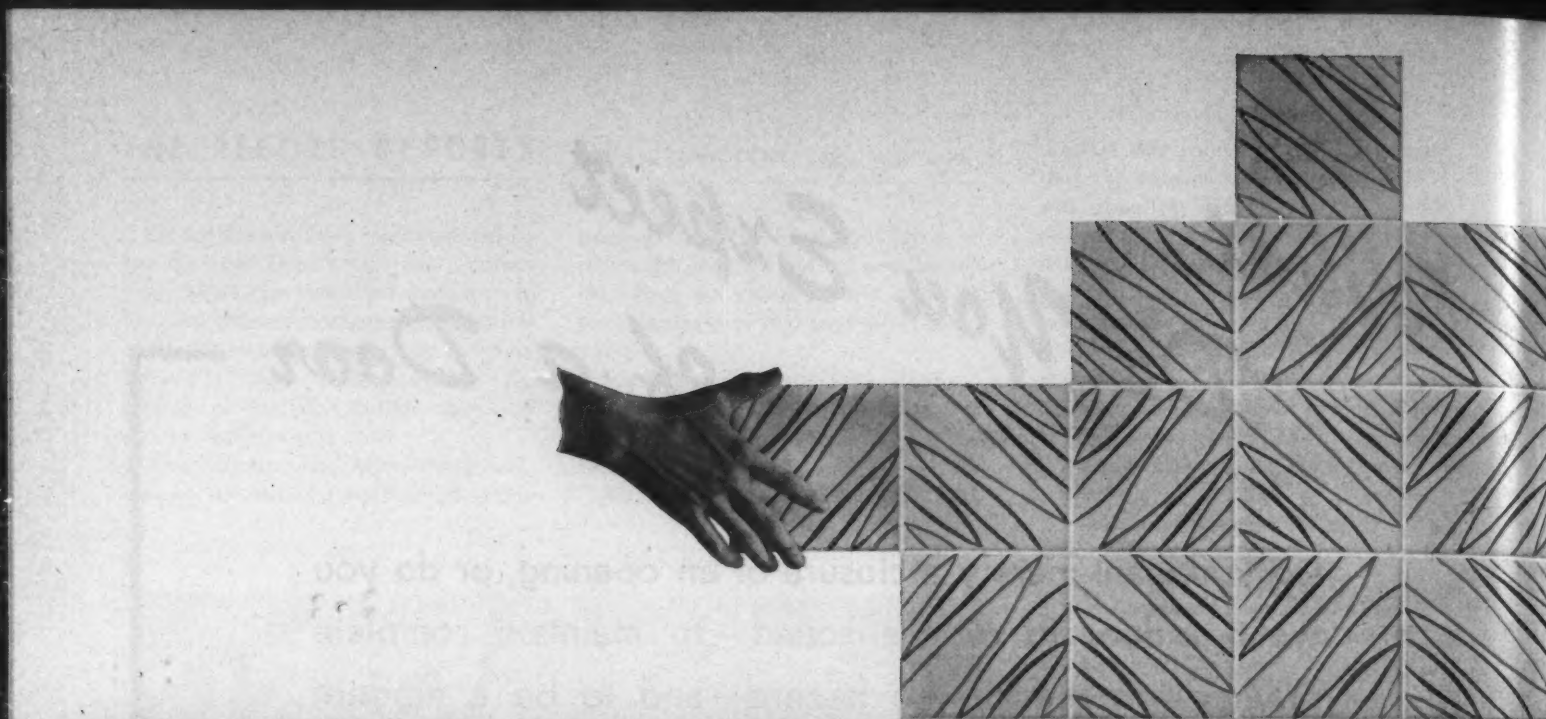
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decorative
opportunities
at your
fingertips!...*

Mosaic Formfree Decorated glazed wall tile is easy to install. The tiles "tumble" into place at random, forming their own provocative pattern. No set plan for the tile setter is needed.

Study the illustration at the top of the page. Note how the pattern unfolds to form an ever-changing, ever-interesting design as installation progresses.

An illustration
lovely floor-
TIFUL's 1951
in time on



now available
in glazed wall tile...
Mosaic's

Formfree Decorated Tile



Last spring, Mosaic introduced "Formfree Patterns" in ceramic Mosaics—acclaimed by many architects to be a significant design contribution and a major step in making walls and floors of tile more interesting.

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For detailed information about Mosaic Formfree Decorated glazed wall tile and other Mosaic Tile, write for copies of "Floors of ceramic Mosaic Tile" and "Mosaic Formfree Decorated Tile." Address your request to Dept. 30-6, The Mosaic Tile Company, Zanesville, Ohio, or the Mosaic office nearest you. Of course, there's no obligation!

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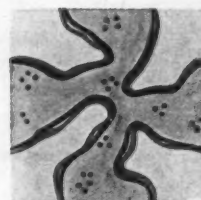
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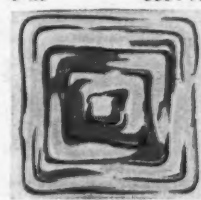
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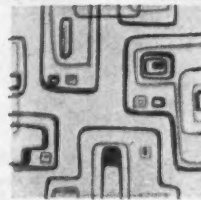
6"x6" 6050-A



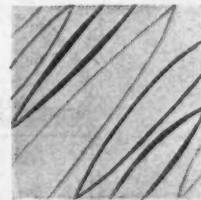
6"x6" 6051-A



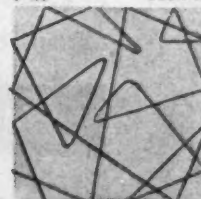
6"x6" 6052-B



6"x6" 6053-B



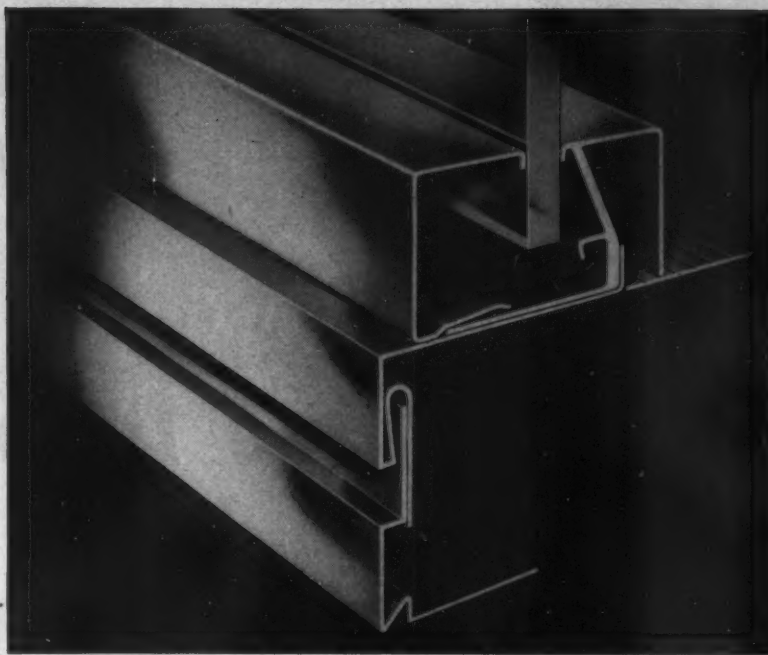
6"x6" 6054-B



6"x6" 6055-A

An illustration of new Mosaic Formfree Decorated Tile at work. This lovely floor-to-ceiling fireplace is a striking feature of HOUSE BEAUTIFUL's 1951 Pacesetter House, Dobbs Ferry, N. Y. The floor is finished in time- and grime-defying Granitex® Mosaic pattern No. 1779-A3.

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No. 70 Sash



No. 72 Double Face Sash



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
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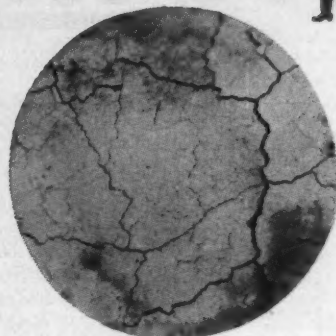
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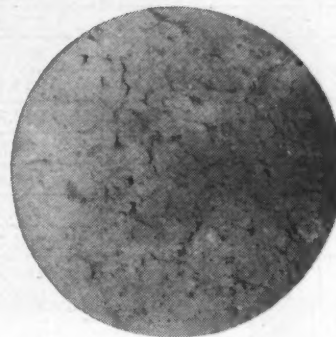
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Write today for our FIRESTOP BESTWALL Folder. It contains complete information and specifications on this remarkable Certain-teed gypsum development.



Unretouched photo showing a section of ordinary gypsum wallboard after it has been subjected to a fire temperature of 1,700°F. for 1 hour. Note the shrinkage cracks, characteristic of ordinary gypsum exposed to heat.



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THE RECORD REPORTS

CONSTRUCTION COST INDEXES

Labor and Materials

United States average 1926-1929 = 100

Presented by Clyde Shute, manager, Statistical and Research Division,
F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assoc., Inc.

NEW YORK

ATLANTA

Period	Residential		Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Concr. Brick and Steel		Residential		Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Concr. Brick and Steel	
	Brick	Frame		Brick and Concr.	Brick and Steel	Brick	Frame		Brick and Concr.	Brick and Steel
1925	121.5	122.8	111.4	113.3	110.3	86.4	85.0	88.6	92.5	83.4
1930	127.0	126.7	124.1	128.0	123.6	82.1	80.9	84.5	86.1	83.6
1935	93.8	91.3	104.7	108.5	105.5	72.3	67.9	84.0	87.1	85.1
1939	123.5	122.4	130.7	133.4	130.1	86.3	83.1	95.1	97.4	94.7
1940	126.3	125.1	132.2	135.1	131.4	91.0	89.0	96.9	98.5	97.5
1946	181.8	182.4	177.2	179.0	174.8	148.1	149.2	136.8	136.4	135.1
1947	219.3	222.0	207.6	207.5	203.8	180.4	184.0	158.1	157.1	158.0
1948	250.1	251.6	239.4	242.2	235.6	199.2	202.5	178.8	178.8	178.8
1949	243.7	240.8	242.8	246.4	240.0	189.3	189.9	180.6	180.8	177.5
1950	256.2	254.5	249.5	251.5	248.0	194.3	196.2	185.4	183.7	185.0
June 1951	272.9	270.9	264.6	266.3	262.9	212.3	213.9	204.4	203.2	204.6
July 1951	272.3	269.8	264.5	266.3	263.2	211.9	213.4	204.8	203.6	206.6
Aug. 1951	272.3	269.8	264.5	266.3	263.2	212.6	214.3	204.9	203.7	206.8
Aug. 1951	% increase over 1939					% increase over 1939				
Aug. 1951	120.5	120.4	102.4	99.6	102.3	146.3	157.9	115.5	109.1	118.4

ST. LOUIS

SAN FRANCISCO

1925	118.6	118.4	116.3	118.1	114.4	91.0	86.5	99.5	102.1	98.0
1930	108.9	108.3	112.4	115.3	111.3	90.8	86.8	100.4	104.9	100.4
1935	95.1	90.1	104.1	108.3	105.4	89.5	84.5	96.4	103.7	99.7
1939	110.2	107.0	118.7	119.8	119.0	105.6	99.3	117.4	121.9	116.5
1940	112.6	110.1	119.3	120.3	119.4	106.4	101.2	116.3	120.1	115.5
1946	167.1	167.4	159.1	161.1	158.1	159.7	157.5	157.9	159.3	160.0
1947	202.4	203.8	183.9	184.2	184.0	193.1	191.6	183.7	186.8	186.9
1948	227.9	231.2	207.7	210.0	208.1	218.9	216.6	208.3	214.7	211.1
1949	221.4	220.7	212.8	215.7	213.6	213.0	207.1	214.0	219.8	216.1
1950	232.8	230.7	221.9	225.3	222.8	227.0	223.1	222.4	224.5	222.6
June 1951	252.1	248.0	240.4	242.4	240.2	245.7	241.5	240.5	244.2	244.5
July 1951	251.6	247.3	240.3	243.2	240.7	245.7	240.2	240.3	244.1	244.2
Aug. 1951	251.3	246.9	240.2	243.2	240.6	245.7	240.2	240.3	244.1	244.2
Aug. 1951	% increase over 1939					% increase over 1939				
Aug. 1951	128.0	130.7	102.4	103.0	102.2	132.7	141.9	104.7	100.2	109.6

The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926-29 for that particular type — considered 100.

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110
index for city B = 95
(both indexes must be for the same type of construction).
Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926-29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear regularly on this page.

Now there are TWO **NOVA Roller Doors**

- silent, fingertip-control, flush doors
- one for closets, partitions,
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- one for passageways,
complete with wall pocket

Two years of constant research and field testing have produced the simplest, most economical doors to install—yet the finest so far developed.

Gone is the overhead hardware, always difficult to install—and noisy. One major expense eliminated! The new Nova Roller Doors are light, strong and warp-resistant. Two rollers revolving on pins act as guides at the top; the weight of the door is carried on two vulcanized rubber rollers at the bottom. There is no floor track; all hardware except floor guides is installed.

These are hollow core, flush doors— $1\frac{3}{8}$ " thick—regularly sold in unselected gum, paint grade and in select White Gum, Black Walnut, African or Philippine Mahogany, Birch, Red or White Oak, stain grade.

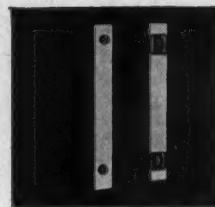
A closet or storage space may be one of the standard sizes—or extend the width of the room. Two or more doors enclose it entirely.

Instead of exposing only part of the interior, as with a swinging door, you have full access. Nine standard opening sizes: 32", 36", 40", 48", 56", 60", 72", 84", and 96". Five standard heights: 6'0", 6'6", 6'8", 6'10", and 7'0".

The Nova passageway door comes assembled in its wall pocket, ready to install for either plaster or dry-wall construction. Five standard opening sizes: 2'0", 2'4", 2'6", 2'8" and 3'0".

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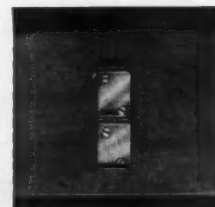
Revolving roller guides operate in head track; vulcanized rubber rollers run on finished floor.



Head tracks are accurately machined for perfect operation of revolving roller guides; side jamb is routed to receive the door.



Passageway door slides easily into wall pocket.



Simple floor guides, installed flush with finished floor, eliminate need for floor track.

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At Chrysler "East"

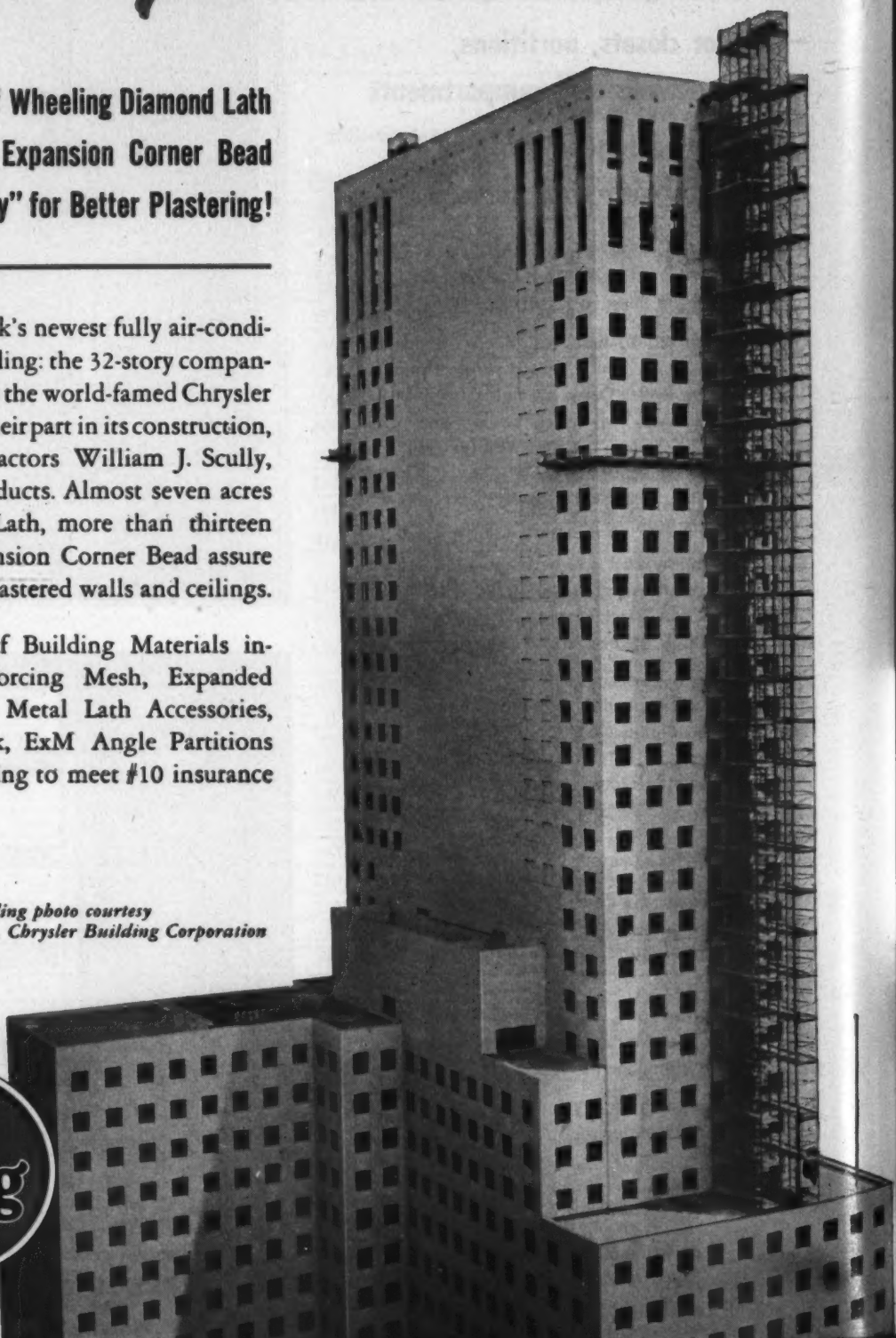


30,000 yds. of Wheeling Diamond Lath
70,000 ft. of Expansion Corner Bead
"Pave the Way" for Better Plastering!

IT'S New York's newest fully air-conditioned building: the 32-story companion structure to the world-famed Chrysler Building. For their part in its construction, Lathing Contractors William J. Scully, Inc. chose Wheeling products. Almost seven acres of Wheeling Diamond Lath, more than thirteen miles of Wheeling Expansion Corner Bead assure a firm "foundation" for plastered walls and ceilings.

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*Building photo courtesy
W. P. Chrysler Building Corporation*



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ATLANTA BOSTON BUFFALO CHICAGO COLUMBUS DETROIT KANSAS CITY LOUISVILLE MINNEAPOLIS NEW ORLEANS

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• Wheeling Diamond Lath is sturdy and stiff, lies flat, goes on easy—even overhead..

• Diamond Lath and Expansion Corner Bead, both Wheeling products, make a good team for lathers to work with.



BUILDING MATERIAL DIVISION

NEW YORK PHILADELPHIA RICHMOND ST. LOUIS



• Here a lather "ties in" a length of Wheeling Expansion Corner Bead—turns the corner on another good lathing job.

REQUIRED READING

DESIGN OF INSULATED BUILDINGS

Design of Insulated Buildings for Various Climates. By Tyler Stewart Rogers. F. W. Dodge Corp. (119 West 40th St., New York 18, N. Y.), 1951. 9 by 12 in. 119 pp., illus. \$5.50.

REVIEWED BY LEONARD G. HAEGER *

This is a splendid book. Not only is its technology sound and up-to-date, but it presents a complex technical subject to the architect and engineer in a completely understandable manner. Never before have the results of research in the construction industry been presented to the designer in the way this book does. Everyone who picks up this book will agree that it should form the pattern for other writers on other technical subjects on which research has been done but never published in a way intelligible to the average architect and engineer who, in the end, want to know not only what the problem is, but how you solve it, what you use and some idea of the relative costs involved.

Most technical publications are understandable to only those few who have a specialized training in the particular research area being discussed. In this book the author, who has been inter-

* *Building Materials Expediter*, N.A.A.H.B. See *ARCHITECTURAL RECORD*, May 1951, p. 14.

preting technical facts of construction research in a practical manner for the past thirty years, exceeds his own previous high standard of writing.

The first half of the book contains a series of basic statements outlining the principles necessary for an understanding of climate, heat control, vapor control and ventilation. While these principles have oftentimes been stated, they are given here with a minimum of technical jargon, which results in a maximum of reader understanding. The very significant material on vapor control is handled in such a way as to remove completely the mysteries of condensation and condensation control.

Everybody talks about the weather, but here is shown a method for analyzing climate, an understanding of which is the basis for doing something about the weather.

The chapter on heat control discusses comfort and the mechanics of movement of heat through building materials, and tells how the various insulating materials work.

The chapter on vapor control is a real contribution to the construction industry. Here the mysteries and vagaries of vapor and its behavior, as well as its control, are discussed in a practical manner.

Following the statements of principles the author provides in the latter half of the book a simple and concise method for putting the stated principles to practical use in terms of comfort, economy and safety from condensation.

The book is beautifully designed and well illustrated with many photographs and drawings.



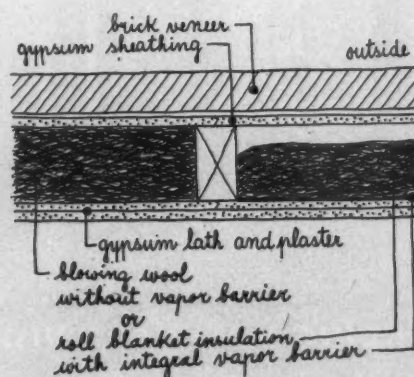
Occupancy of a building determines the amount of water vapor present. Confectioner's store, right, shows high humidity level compared to hardware store, left

(Reviews continued on page 46)

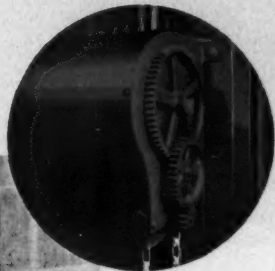
INSULATION THICKNESS, inches	none	1	2	3	3 1/2
CONDUCTANCE "C"		0.27	0.14	0.090	0.075
HEAT TRANSMISSION "U"	0.35	0.15	0.097	0.072	0.065
% OF HEAT STOPPED by Insulation		56%	72%	79%	81%
COMFORT RATING					
winter	51.2°	61.7°	64.7°	66.1°	66.5°
summer	90.7°	81.9°	79.4°	78.3°	78.0°
ECONOMY RATING		\$41.70	\$53.40	\$58.80	\$60.60
OCCUPANCY-MOISTURE RATING	8%	61%	73%	79%	**

Analyses of particular types of construction in terms of comfort rating, economy rating and occupancy rating—data for brick veneer on gypsum sheathing. Illustrations from DESIGN OF INSULATED BUILDINGS

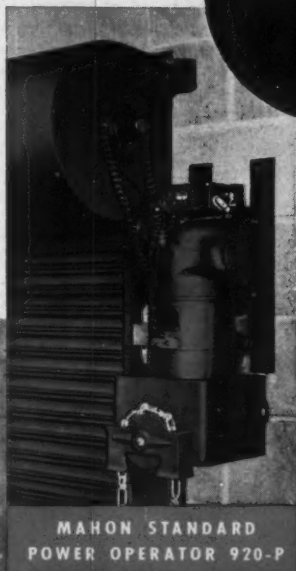
brick veneer on gypsum sheathing



Rolling Steel DOORS



MAHON
CHAIN-GEAR
OPERATOR



MAHON STANDARD
POWER OPERATOR 920-P

Manually, Mechanically, or Power Operated

Rolling Steel Doors offer the ultimate in space economy, permanence, convenience, and protection against intrusion or fire . . . their vertical roll-up action occupies no usable space inside or outside the opening . . . their quick opening, quick closing operation by means of reliable power operators, controlled from convenient points, saves valuable time. Like most other things, there is a vast difference in the quality of rolling steel doors on the market today—a careful check of specifications will reveal this. For instance, the galvanized steel for the interlocking curtain slats of Mahon Rolling Steel Doors is chemically cleaned, phosphatized and chromated to provide paint bond, and the protective enamel coating is baked on at 350° F. prior to roll-forming. This is just one of the extra value features of Mahon Rolling Steel Doors—you will find others. See Sweet's Files for complete information including Specifications, or write for Catalog No. G-52.

THE R. C. MAHON COMPANY

Detroit 34, Michigan • Chicago 4, Illinois • Representatives in all Principal Cities

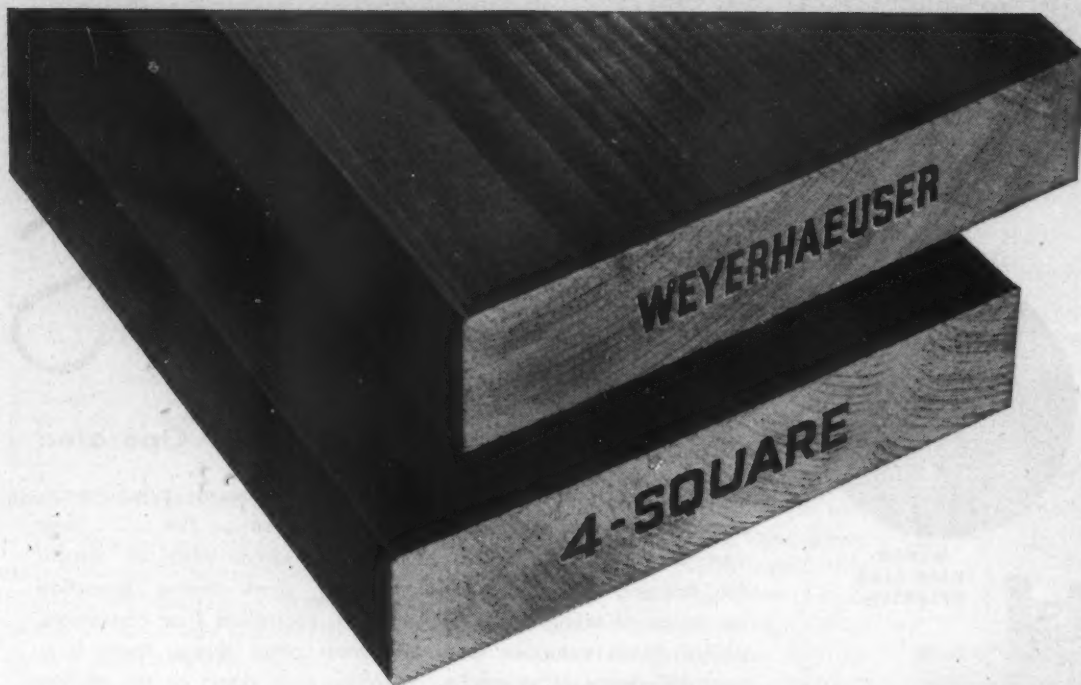
Manufacturers of Rolling Steel Doors, Grilles, and Automatic Closing Underwriters' Labeled Rolling Steel Doors and Fire Shutters; Insulated Metal Walls; Steel Deck for Roofs, Partitions, and Permanent Concrete Floor Forms.



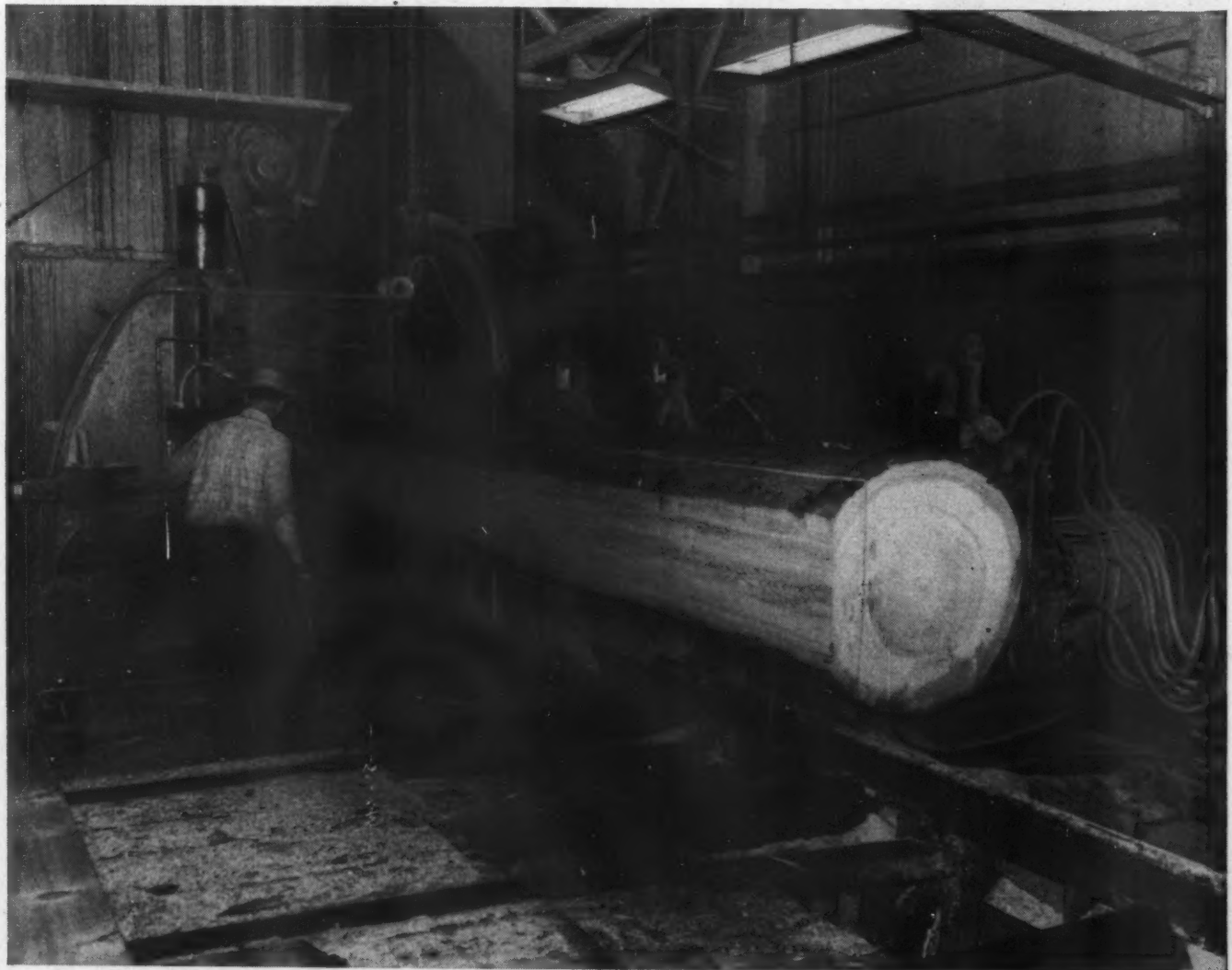
ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

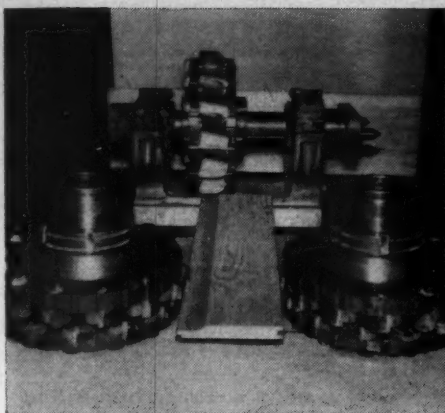
Five Mahon Power Operated Rolling Steel Doors 22 Ft. x 14 Ft. installed in openings to an enclosed loading dock. These doors are operated by remote push-button controls.

MAHON



THIS BRAND NAME ON LUMBER MEANS . . .

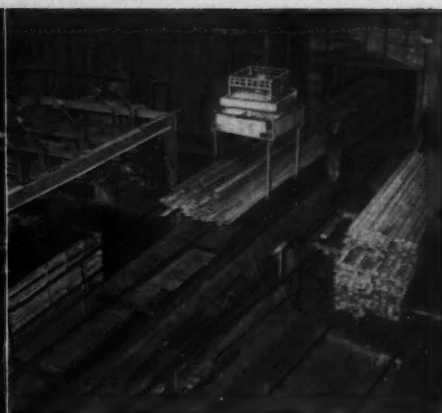




THREE CUTTER HEADS, used in planing mill, arranged to show how they shape drop siding. Whirling at 3,250 r.p.m., they cut tongue, groove and channel simultaneously.



GANG SAW (seen from feeding end) cuts big cants into lumber of wanted thickness. Multiple-blade saws quickly transform these huge cants into many lumber items.



LUMBER is carried in units by crane to chain transfer systems leading to rough dry sheds or planing mills for further fabrication. Here lumber is entering the unstacker.

GOOD LUMBER...*through* Efficiency in Manufacture

When you are in the market for the "best buy" in lumber, look to the producer who can convert good logs into fine lumber most efficiently.

On that test, one famous line of lumber products stands out above all others. It is the one branded . . . "Weyerhaeuser 4-Square".

If you could follow the flow of lumber through a Weyerhaeuser mill, you would see a series of sawing, sorting, kiln-drying and finishing operations demonstrating mass production at its best. Slow and costly hand operations have been virtually eliminated. Belts, rollers and conveyors, rail cars, cranes and straddle buggies move the lumber along swiftly. An amazingly efficient arrangement of every type of saw, trimmer, surfer, shaper and mechanical device for manufacturing lumber . . . many designed by Weyerhaeuser engineers . . . get the maximum footage of good, usable lumber from every log.

These great mills are ingenious in design and efficient in layout. And for every dollar invested in safer, more pleasant and efficient plants; in finer, faster saws; more efficient

conveyors, and more precise control equipment, Weyerhaeuser has been able to deliver better lumber value to the consumer.

When you need good lumber, in a wide selection of species and grades, see your Weyerhaeuser 4-Square Lumber Dealer.

One of a series of advertisements defining the important factors contributing to the production of good lumber.



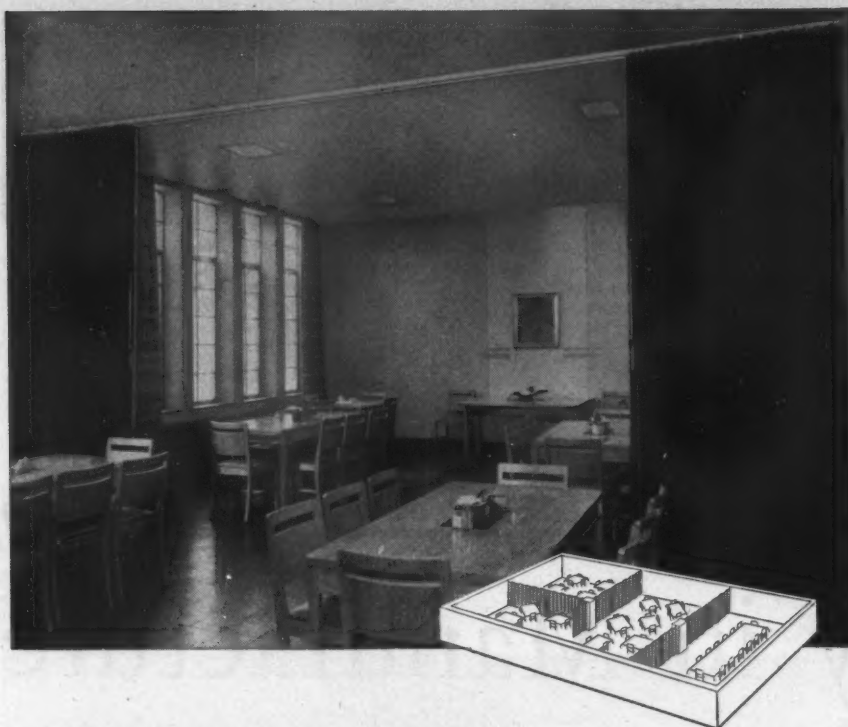
The Longview, Washington, Mills

At mills located on the West Coast and Inland Empire, Weyerhaeuser 4-Square Lumber is produced in a range of products from Douglas Fir, Idaho White Pine, Ponderosa Pine, West Coast Hemlock, Western Red Cedar and related species.

Weyerhaeuser 4-Square Lumber and Services

WEYERHAEUSER SALES COMPANY • ST. PAUL 1, MINNESOTA

How many classrooms in a cafeteria?



"MODERNFOLD" DOORS have the answer

You're looking into a college cafeteria that leads a double life. At lesson time the "Modernfold" doors fold together to form much needed classrooms. At lunch time these steel-framed, accordion-type doors fold back to the wall—and quickly convert the classrooms into a cafeteria.

You keep clients happy when you give them more room—without having to add costly extra floor space. And that's exactly what they get when you specify "Modernfold" doors. As shown above, they're a "natural" for economical and flexible room division. And, as conventional doors, they *save the space that swinging doors waste*.

Economical? Definitely. "Modernfold" doors are moderate in first cost, and maintenance is practically nothing. Their handsome vinyl covering—in colors to match any decorating scheme—is fire-resistant . . . resists chipping, peeling, cracking, and fading . . . washes clean with soap and water.

For further information, mail the coupon or look up our distributor under "doors" in your classified directory.

Sold and Serviced Nationally
NEW CASTLE PRODUCTS
NEW CASTLE, INDIANA

In Canada: Modernfold Doors, 1315 Greene Avenue, Montreal



COPYRIGHTED NEW CASTLE PRODUCTS 1951

New Castle Products
Box No. 811
New Castle, Indiana

Gentlemen: Send information on "Modernfold" doors.

Name.....

Address.....

City.....County.....State.....

REQUIRED READING

(Reviews continued from page 42)

ENGLAND AGAIN

The Buildings of England. Nottinghamshire. By Nikolaus Pevsner. Penguin Books, Inc. (3300 Clipper Mill Road, Baltimore, Md.), 1951. 7½ by 4¾ in., 248 pp., illus. 85 cents.

The second of a series which will include all the counties of England, this book in very thorough fashion treats the buildings of Nottinghamshire. An alphabetical arrangement of descriptions of the buildings makes up the major portion of the book. The extras include a map of the county, placing each name mentioned; an introduction of background material; a glossary; and indexes of plates, artists and places.

The emphasis is aesthetic appreciation; the historic range, from prehistoric times to the present day; the subject matter, all architectural features of buildings of interest. A 64-page center section of photographs adds to both the interest and the value of the work.

Nineteenth Century Architecture in Britain. By Reginald Turnor. The British Book Center, Inc. (122 East 55th Street, New York 22, N. Y.), 1951. 6 by 9 in. 118 pp., illus. \$4.75.

"Our subject is the nineteenth-century transition from classicism, through the Gothic Revival, to decay, death, and the signs of new life; and the progress of the Romantic Movement, which paradoxically ended by killing the romance of architecture among other arts." So the author defines the province of his work, to be concerned with the middle of three architectural revolutions which have occurred in England during the past three and a half centuries—the first being the Renaissance, an esthetic revolution; the third, having to do with the use of materials and still going on, a materialistic revolution.

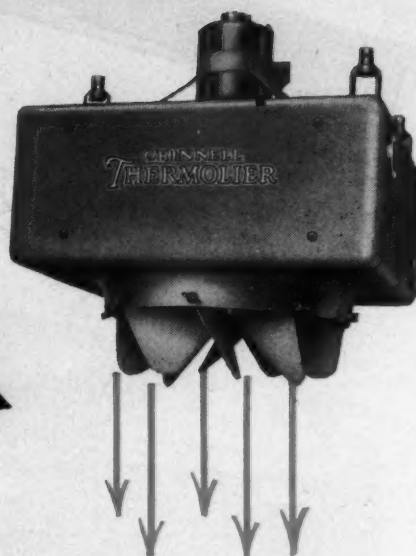
This middle revolution Mr. Turnor characterizes as "moral"—a Battle of the Styles, the overthrow of established Renaissance tradition by, among other lesser forces, the Gothic Revival. In this hundred-year span the author traces the decline of the building arts from "the order and decency of traditional Georgian design to a tastelessness and anarchy which reached its lowest point about the time of the Great Exhibition." The decline, the state of "tastelessness and

(Continued on page 50)

DOWNRIGHT

better performance

Vertical Delivery
THERMOLIER
Unit Heaters . . .

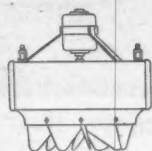


RIGHT DOWN

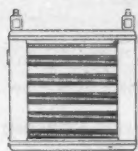
where maximum heat is desired...

in warehouses, plants and other
hard-to-heat buildings

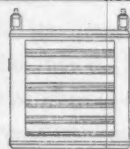
4 MODELS 18 SIZES



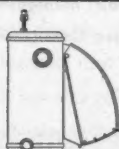
Vertical
Delivery



Horizontal
Delivery



Textile
Model



Velocity
Nozzle

A thermostatic trap, the simplest and least expensive of all traps, is practical because of Thermolier's exclusive cooling leg.

Maximum capacity assured, annoying destructive water hammer eliminated — by built-in pitch of tubes and internal cooling leg which assure continuous drainage of condensate.

Damaging strains caused by expansion and contraction eliminated by "U" type expansion tubes.

Safety and durability assured with leak-proof tube-to-header construction.

Five other important construction features. Write for Thermolier Catalog.

HEATING COMFORT AND ECONOMY. Heat is forced down to the working level . . . not banked uselessly at the ceiling level. Thermoliers provide quick heating from a cold start. Desired room temperatures are easily maintained within a close range.

ADAPTABILITY TO EQUIPMENT AND FLOOR LAYOUT. The units and the simple piping are overhead where they do not interfere with arrangement of operating machinery or equipment and do not take up valuable floor or wall space. Units are easily re-located at any time to meet changes in plant layout or heating requirements.

LOW FIRST COST. Thermoliers are so efficient and so compact that their heating capacity is often equivalent to the capacity of cast iron radiation or pipe coils of twice the cost.

GRINNELL

WHENEVER PIPING IS INVOLVED



Grinnell Company Inc., Providence 1, Rhode Island

Sales Offices and Warehouses in Principal Cities

pipe and tube fittings • welding fittings • engineered pipe hangers and supports • Thermolier unit heaters • valves
Grinnell-Saunders diaphragm valves • pipe • prefabricated piping • plumbing and heating specialties • water works supplies
Industrial supplies • Grinnell automatic sprinkler fire protection systems • Amco humidification and cooling systems

"SO EASY TO INSTALL"

"MAINTENANCE IS NIL"

Coast-to-Coast... Builders Acclaim



TYPICAL INSTALLATION AT SOUTHERN APARTMENTS, FT. CAMPBELL, KY. (A WHERRY HOUSING PROJECT)

Thousands of Rusco Prime Windows are being used to speed the completion of these permanent quarters for personnel at Ft. Campbell.

ARCHITECT: E. W. Augustus, Louisville, Ky.

BUILDER: Algernon Blair, Montgomery, Ala.

CONTRACTOR: Ft. Knox Construction Co., Louisville, Ky.

BARKLEY SQUARE DEVELOPMENT, SANTA ANA, CAL.

Burt Huff, the builder, has used 1,332 Rusco Prime Windows on his Barkley Square and Sunshine Homes developments. He says, "We find Rusco very easy to handle during construction and recommend it to anyone interested in eliminating delays and adjustments."

BUILDER: Burt Huff, Santa Ana, Cal.



HARVARD AVENUE APARTMENTS, BROOKLINE, MASS.

The builder states, "We are exceedingly satisfied with the appearance and ease of installation of the Rusco Prime Windows, and we now know that maintenance will be practically nil."

BUILDER: R & S Construction Company, Boston, Mass.

"EXCEEDINGLY SATISFIED WITH THEM"

"CUSTOMERS APPRECIATE THE FEATURES"

RUSCO Hot-Dipped Galvanized Prime Window

**REPORT BIG SAVINGS
ON INSTALLATION,
LABOR AND MAINTENANCE
WITH REVOLUTIONARY
PRE-ASSEMBLED UNIT**

INSTALLED IN MINUTES in many types of construction—because it is a *complete* window unit. Comes finished painted, fully-assembled with glass, screen, built-in weather-stripping, insulating sash (optional) and wood or metal casing—all ready to place in the window opening!

LOW INITIAL COST, plus savings on installation and minimum maintenance make the Rusco Prime Window that rarest of all combinations—a top quality specification that actually reduces building cost!

THE EXCLUSIVE FEATURES of the Rusco Prime Window offer many other conveniences and advantages. For example, the glass and screen panels are easily removable from the inside. Thus, materials can be passed through the full window opening with breakage minimized. Filtered screen ventilation control permits *regulated* ventilation and full protection for drying plaster. And many others.

For catalog of data and specifications, see your local Rusco Prime Window distributor, or mail coupon below.



STATE-AIDED HOUSING PROJECT, EVERETT, MASS.

Rusco Prime Windows are used throughout on these attractive multiple-dwelling units. Used as flankers on the fixed picture window units, they permit controlled, filtered-screen ventilation.

ARCHITECTS: Drummey & Duffill, Boston, Mass.

CONTRACTOR: Concrete Construction Co., Chelsea, Mass.



**GLASS AND SCREEN INSERTS
EASILY REMOVED FROM INSIDE
FOR CONVENIENCE IN CLEAN-
ING.** The Rusco removable
sash feature has tremendous
appeal as a convenience and
safety feature.



A PRODUCT OF
THE F. C. RUSSELL COMPANY
CLEVELAND 1, OHIO

World's Largest Manufacturer of All-Metal Combination Windows

THE F. C. RUSSELL COMPANY
Dept. 7, AR-111, Cleveland 1, Ohio

Gentlemen: Please send me catalog of informative data and specifications on Rusco Prime Windows.

Name Title

Company

Address

City Zone State

philippine mahogany



Beautiful • Permanent

The rich, natural color, fine grain and figure of this exotic tropical hardwood will add to the beauty and value of any size home... please the most discriminating client. Available in solid lumber or plywood, Philippine Mahogany paneling is competitively priced, easily installed, requires minimum maintenance, and actually becomes more beautiful with age. The wood's ability to take a wide variety of finishes makes it well suited for any style of architecture—for every room in the house.

WRITE FOR FURTHER INFORMATION



PHILIPPINE MAHOGANY ASSOCIATION, INC.
Dept. AR, 111 W. Seventh Street, Los Angeles 14, Calif.

REQUIRED READING

(Continued from page 46)

anarchy" the author attributes to a Victorian practice: the application of moral standards to esthetic and practical questions.

Interestingly and authoritatively written, Mr. Turnor's study of nineteenth century architecture in Britain will find a place not only among students of the subject, but also among those for whom Regency and Victorian times are of interest. One hundred twenty-seven photographs amplify the text.

The City of London. A Record of Destruction and Survival. The Architectural Press (9-13 Queen Anne's Gate, London, S.W.1), 1951. 9½ by 7¼ in.; 352 pp.; 360 photographs, engravings and maps, 40 in color. 25 shillings net.

With something more than civic pride—maybe with affection—is told the story of the City of London. From the time the Romans built a wall 17 centuries ago to the present reconstruction period, these pages proclaim in unwritten statement that, come great fires, come blitzes, come what may—the City of London will stand. And not only will it stand, but it will stand *uniquely* among cities.

The book is divided into five parts: (1) a description of the aims of the reconstruction proposals of 1947 and how they relate to the city's life and activities; (2) a brief account of the City's growth and development; (3) a record of war damage; (4) supplement to Part 1, with mention of rebuilding in progress at the end of 1950; (5) the full text of the consultants' (Dr. C. H. Holden and Professor W. G. Holford) final report on reconstruction to the Common Council.

As a pictorial account alone, the book is noteworthy. Here is the first known picture of London, made in A.D. 296. Here is a series of hitherto unpublished photographs of the bomb damage from 1940-1945, and a series of drawings by Gordon Cullen visualizes the City after reconstruction is completed. But it is not the pictorial element so much as it is the delightfully written text which flavors this book pleasingly English.

The text, pictures, drawings, numerous maps, Consultants' Report, and chronological table of the City's total history add up to the story of a great city—told with something more than civic pride, with affection.

(Reviews continued on page 52)

A Turquoise blue print speaks for itself:

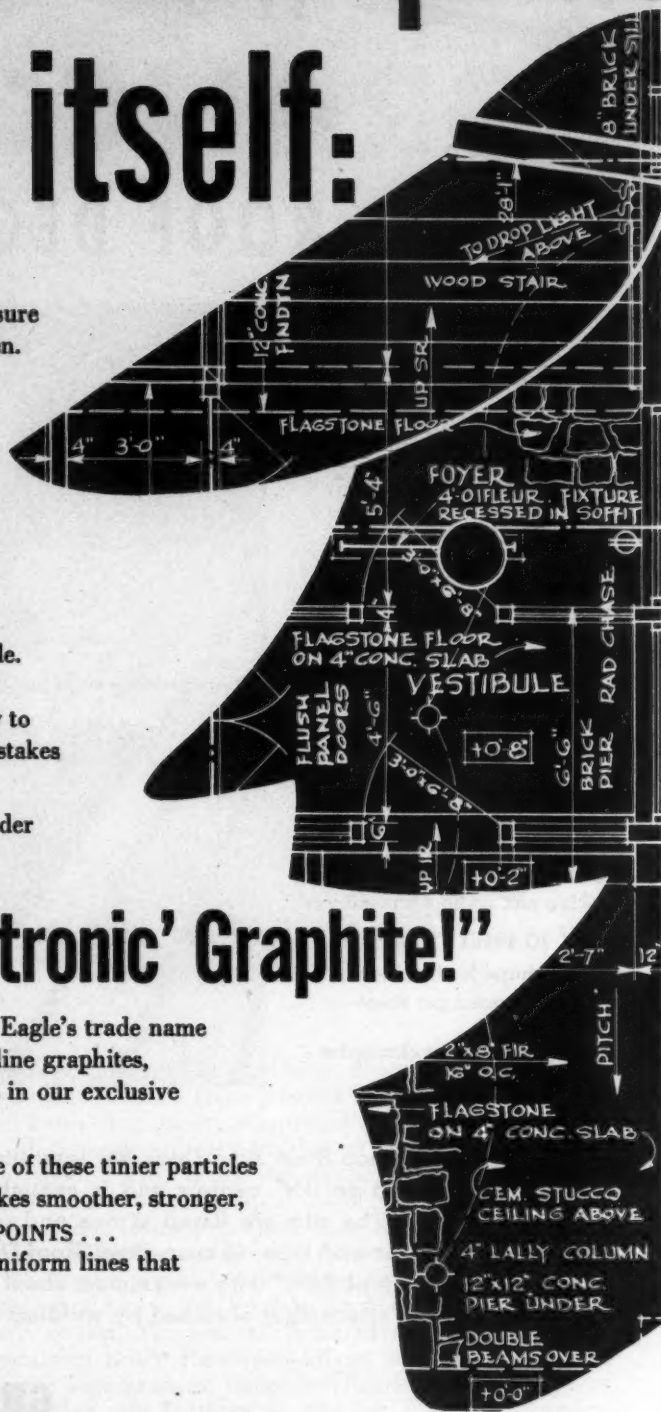


"TURQUOISE pencils and leads made with 100% 'Electronic' graphite sure make life easier for draftsmen. And as for us blue prints ... we look snappier than ever before."

"Every line now stands out in clear contrast ... sharp-edged and uniform."

"Every figure is plainly legible. Erasures come clean, and leave no 'ghosts'. I'm so easy to read that guess-work and mistakes are eliminated."

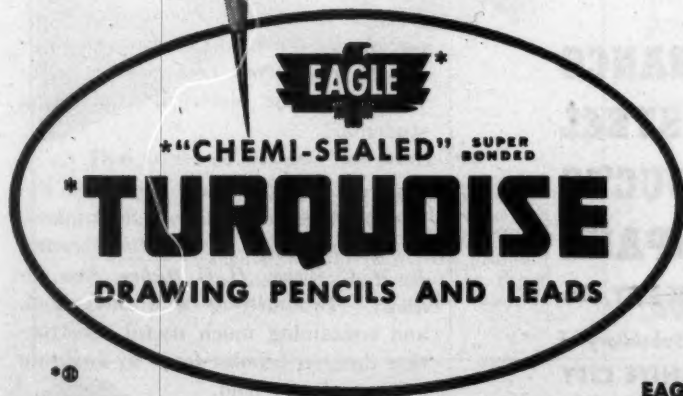
"No wonder I say ... no wonder everyone is saying ..."



Hooray for 100% 'Electronic' Graphite!"

"ELECTRONIC" GRAPHITE is Eagle's trade name for a blend of purest crystalline graphites, reduced to micron fineness in our exclusive Attrition Mill.

By compacting millions more of these tinier particles into every inch of lead, it makes smoother, stronger, NON-CRUMBLING NEEDLE POINTS ... and denser, sharper, more uniform lines that reproduce to perfection.



PROVE IT YOURSELF. Write us for a sample of the new TURQUOISE in any degree you desire.

EAGLE PENCIL COMPANY • NEW YORK • LONDON • TORONTO

New!

IT'S

GRANCO STEEL ROOF DECK

ROTARY-PRESS FORMED SHEETS

Uniform-pattern

WIDE COVER WIDTH

Reduced number of side laps

Material economy

Greater resistance to concentrated loads

MOST EFFECTIVE SHAPE

(relationship between rib and flat)

Greater Stiffness

High Strength

Deep Ribs (1 5/8")

(the same thickness as a 2" x 4" giving maximum flexibility for architectural design)

ATTRACTIVE DURABLE FINISH

Alkyd resin paint

Rust inhibitive

Autumn brown color

Striking panel effect for ceilings

QUICK TO ERECT

Correct shape for fast laying

35 sq. ft. covered per sheet placed

Side lap adjustment eliminates "sheet crawl"



DESCRIPTION—Granco Steel Roof Deck has longitudinal ribs 1 1/8" deep spaced on 5 3/4" centers and is available in 18, 20 or 22 gage. The ribs are flared at one end permitting proper nesting at end laps. Granco Steel Roof Deck has a wide cover width of 28 3/4" with a maximum sheet length of 14' 4". Positive attachment obtained by welding.

WRITE FOR FREE BOOKLET

Gives description, physical properties, complete loading tables and suggested specifications for Granco Steel Roof Deck. Request booklet No. BDr-511.



GRANCO STEEL PRODUCTS COMPANY

GRANITE CITY, ILL.

A Subsidiary of
**GRANITE CITY
STEEL CO.**

REQUIRED READING

(Reviews continued from page 50)

BOOKS RECEIVED

History of Religious Architecture, A. By Ernest Short. W. W. Norton & Co., Inc. (Scranton, Pa.) — A history dealing with buildings representing many religions from all parts of the world; "an attempt," according to the author, "to trace the age-long effort to enclose and cover a space which would enshrine the idea of Godhead."

Country Buildings. How to Appreciate Them and How to Sketch Them. By William R. Finch. The British Book Centre, Inc. (New York) — Lessons in drawing and cursory details of construction, with many sketches of English cottages and out-buildings to demonstrate the drawing techniques described in the text.

The Fabric of Modern Buildings. By E. O. Warland. The British Book Centre, Inc. (New York) — "A practical book for architects, builders and students, who are seeking detailed information upon the employment of modern material and methods in building construction."

Maryland Builds. Report of the Department of Public Improvements and the State of Maryland. For the Period January 1, 1950 to January 8, 1951. Department of Public Works (Baltimore) — A year's construction progress and achievement record; with reports on hospitals, training schools, educational facilities, various other public buildings, complete or under construction.

Light, Photometry, & Illuminating Engineering. By William E. Barrows. McGraw-Hill Book Co. (New York) 3rd ed. — Revised text for electrical engineering students.

Reference Handbook for Construction Engineers, Architects, Builders, Superintendents of Construction, and Building Foremen. By H. G. Richey. H. G. Richey (New Orleans) — Intended as a working tool, and containing much useful construction data in tabular form to facilitate reference in the field.



*Prefinished
... for beauty and
economy*



The famous Bruce "Scratch Test"

Half of this panel of flooring oak is finished by the Bruce penetrating seal method, the other half with a commonly used surface-type finish. When a coin is scraped across the panel, the ordinary finish scratches and chips away—but the Bruce finish is unharmed because it's "in the wood."

■ Bruce Hardwood Floors (Strip, Block, Ranch Plank) are *prefinished* because factory methods produce a penetrating seal finish that cannot be equalled on the job. Tests prove it will outwear ordinary finishes at least 3 to 1. The factory-applied finish brings out all the natural beauty of the wood . . . doesn't cover up or discolor the grain as surface finishes do. Housewives find, too, that *prefinished* Bruce Hardwood Floors are far easier to keep clean and beautiful.

The use of *prefinished* floors also saves from 3 to 5 days' time on a house job, because the floor is ready to use as soon as laid. Yet, with all these advantages, the cost of *prefinished* Bruce Hardwood Floors is normally less than for the same grade of unfinished flooring plus the expense of sanding and finishing on the job. Write for complete information—see our section in Sweet's Files.

E. L. BRUCE CO., MEMPHIS 1, TENN.

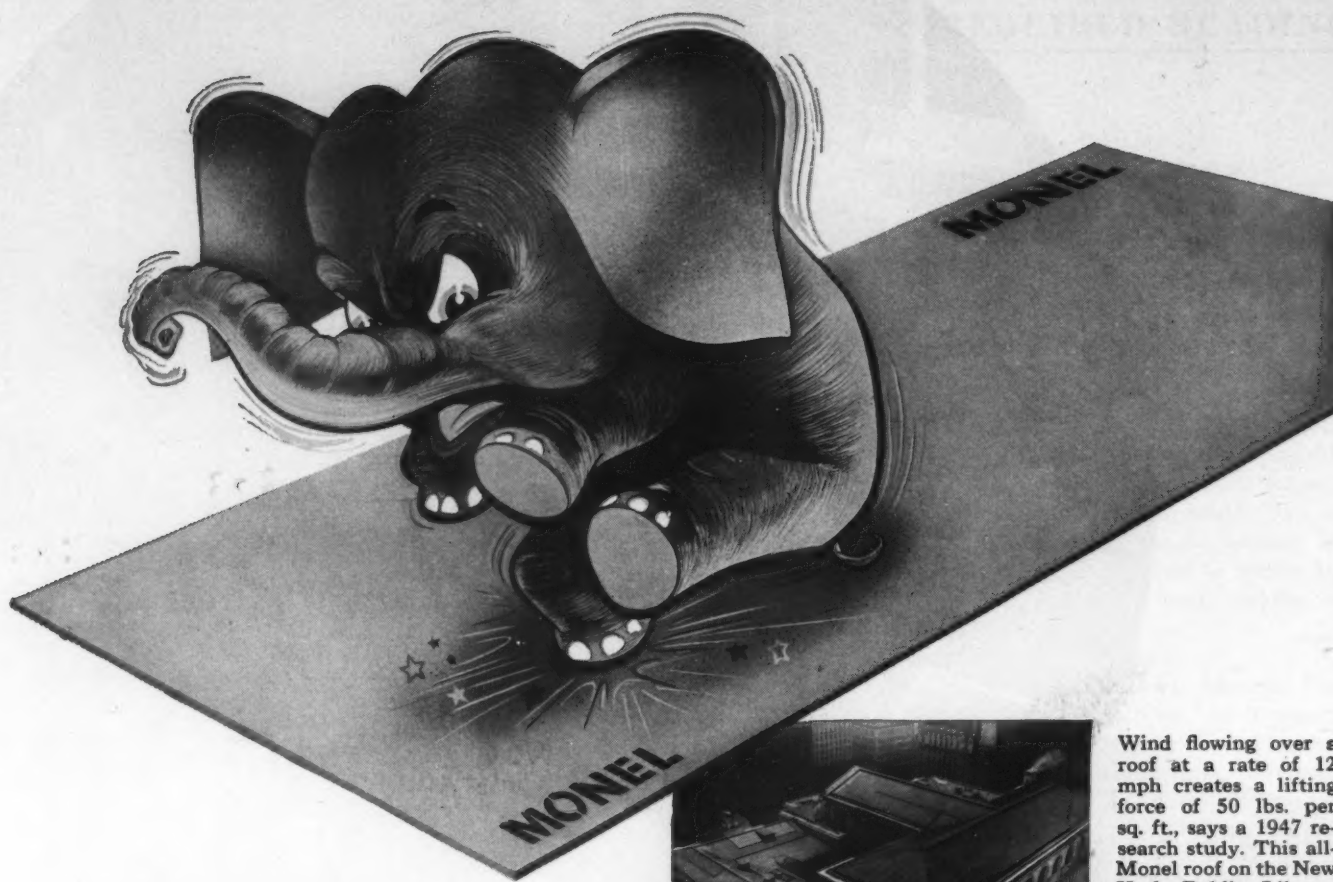
Bruce

HARDWOOD FLOORS

PREFINISHED Strip, Block, Ranch Plank

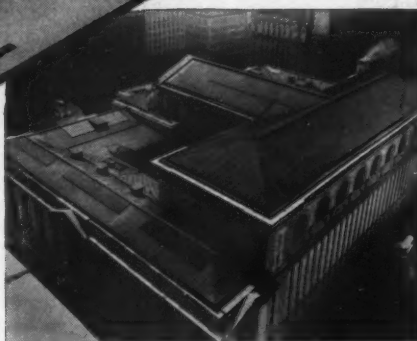


Other Bruce Products: Unfinished Flooring (Block, Strip, Plank) • Lumber and Wood Parts • Terminix • Floor Cleaner, Waxes, Finishes



A roofing sheet to remember—

...it's rigid
...it's strong
and tough!



Wind flowing over a roof at a rate of 12 mph creates a lifting force of 50 lbs. per sq. ft., says a 1947 research study. This all-Monel roof on the New York Public Library has withstood every wind that tore over the city since 1936. Some parts of the roof date back to 1928, when the first test section was installed.

When a Monel® roof goes up, it doesn't matter much what comes down on it.

For Monel is just about as rugged as a roofing metal can be.

Two-thirds nickel and one-third copper, Monel provides twice the rigidity of commonly-used materials.

What's more, it is stronger and tougher than structural steel. (And non-rusting, besides!) It withstands damage and deformation during installation... and impact, abrasion and flexure *after* installation.

Right now—because the defense program calls for so much nickel—Government orders prohibit the use of Monel for building applications.

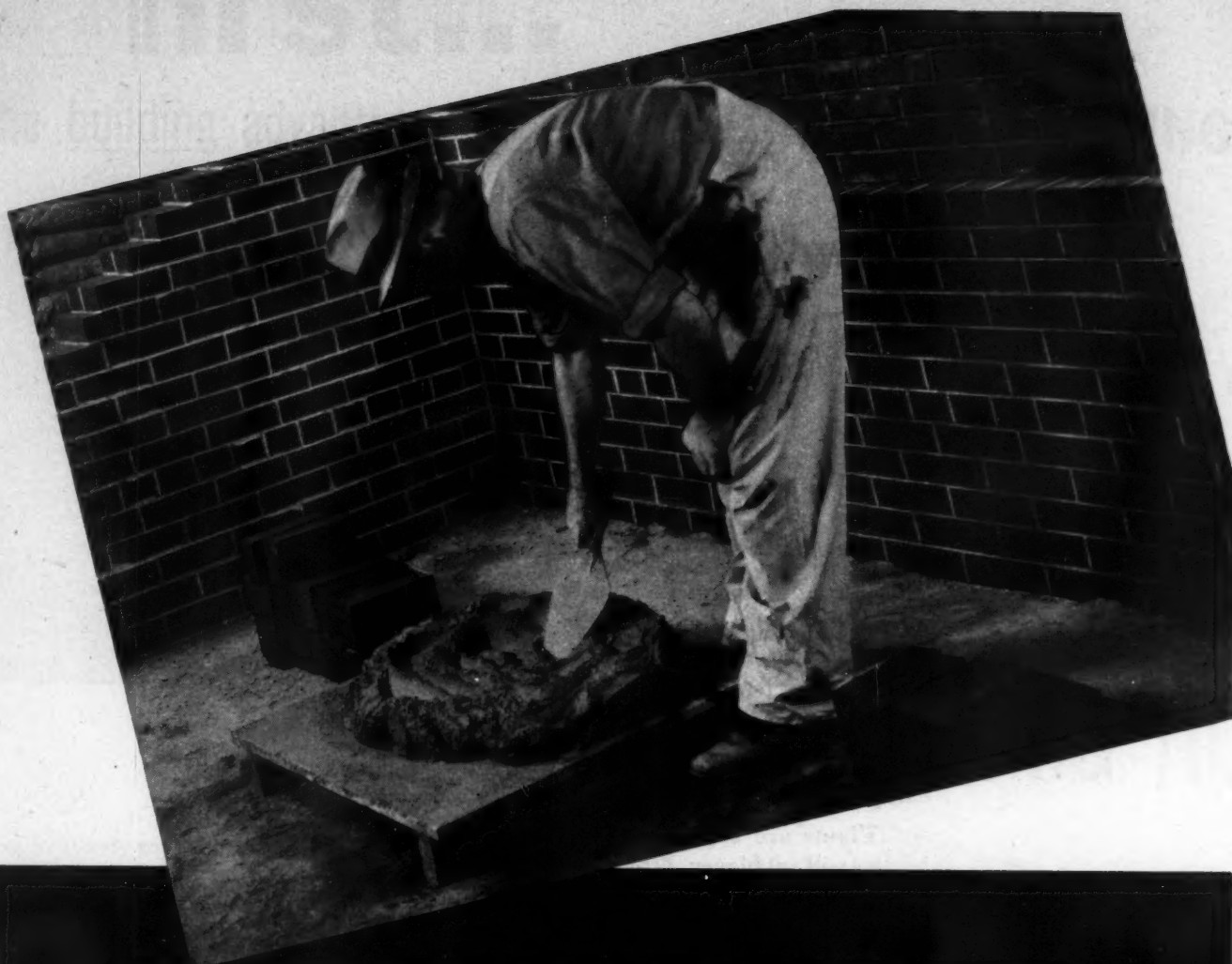
But the time will come again when there is enough Monel available to meet normal roofing needs! Meanwhile, INCO can help you in planning for the future. Call on our Architectural Section for the latest technical information and literature. There's no obligation, of course.

MONEL

...“for the life of the building”



THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York 5, N. Y.



BRIXMENT

is more plastic!

ONE of the most outstanding characteristics of Brixment is its plasticity. Its working qualities are comparable to those of lime putty. Because of this unusual plasticity, a bag of Brixment will carry three full cubic feet of sand, and still make good workable mortar. . . .

This exceptional workability makes it easy for the bricklayer to secure neat, clean brickwork, with the brick properly bedded and the joints well filled. The final result is a better job, at lower cost.



LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE, KENTUCKY

When should heating equipment go to pieces?

Only when you want it to. When conditions change, for example, equipment that's built in sections can easily be broken down and switched from one place to another.

Carrier's blower-type Heat Diffusers are flexible that way. Specify them today for heating or ventilating a factory or a warehouse . . . a garage or an armory. Years from now they'll still do a complete heating job no matter how much the building's been changed.

You can set them on the floor. You can mount them from the ceiling or trusswork. Or, because they're built in sections, you can easily convert a floor model to a suspension model if you wish.

Plants are expanding. Assembly lines must change. Warehouses will get bigger. When they do, it's easy to redirect the warmed air because of Carrier's different types of discharge outlets, each with adjustable louvers.

Carrier Heat Diffuser capacities range up to 1,720,000 Btu's per hour. Air handling capacities go up to 25,000 cfm. For complete information write Carrier Corporation, Syracuse 1, New York.

Carrier Industrial Heating Equipment is playing an important role in our nation's present defense effort just as it did in World War II. This type of equipment is used extensively to provide heat economically in industrial plants producing war materials, as well as in plane hangars, barracks, Army and Navy depots and similar military establishments.



Carrier

AIR CONDITIONING
REFRIGERATION
INDUSTRIAL HEATING

Carrier 46P Heat Diffuser. This vertical suspension type doubles quickly as a floor model when it is necessary.

Carrier 46R Heat Diffuser. For horizontal suspension from ceilings or trusswork. V-belt drives permit easy adjustment.

Carrier 46Q Heat Diffuser. Multiple discharge outlets and adjustable louvers supply flexible heating for large areas.

first...

all the building advantages of **STRUCTURAL CLAY FACING TILE**



now...

all the color advantages of

"COLOR-ENGINEERED" FACING TILE

You have frequently specified Facing Tile for its building advantages: permanence, durability, low maintenance, and the fact that it is a wall and finish in one.

Now... you have new advantages! Structural Clay Facing Tile comes to you in scientifically determined colors.

It's *color-engineered* Facing Tile!

Now... you can select functional color for industrial, commercial or institutional interiors. You can select color with a "scientific approach."

"The Scientific Approach to Color Specification" tells you how.

This important new book was developed by The Facing Tile Institute in collaboration with the noted color authority, Faber Birren. It tells you how color can help building interiors accomplish their purpose... help increase production and morale, aid lighting.

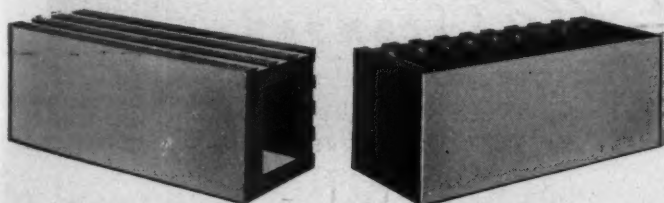
Send for your free copy of "The Scientific Approach to Color Specification" NOW! Simply fill out and mail the coupon below.



**SEND FOR
FREE COPY
NOW!**

FACING TILE INSTITUTE

1520 18th Street, N. W., Washington 6, D. C.



FACING TILE INSTITUTE, Department AR-11
1520 18th Street, N.W., Washington 6, D. C.

Gentlemen:

Please send me your new booklet "The Scientific Approach to Color Specification."

Your Name _____

Title _____

Street _____

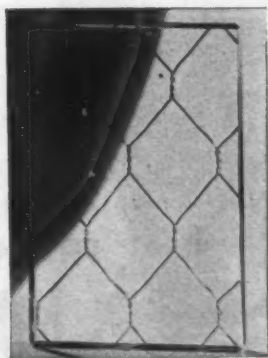
City _____ Zone _____ State _____

MISSISSIPPI WIRE GLASS

the Approved Fire Safeguard



Polished Misco Wire Glass, highest achievement of the rolled glass manufacturer's art, combines the utmost in protection with modern beauty.



Polished Wire Glass by Mississippi, approved fire safeguard, helps prevent drafts... is effective in holding fires within bounds of origin.



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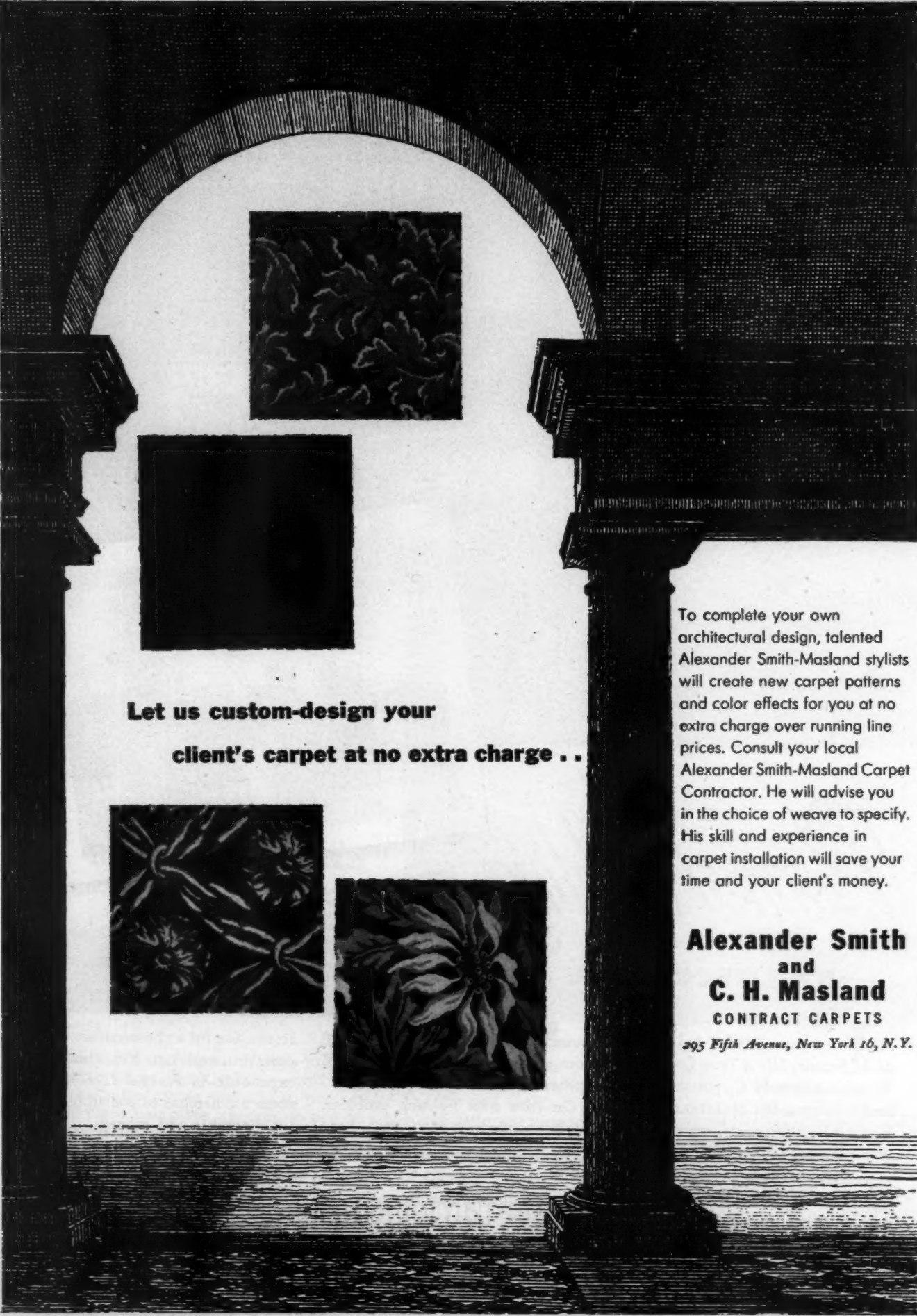
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To complete your own architectural design, talented Alexander Smith-Masland stylists will create new carpet patterns and color effects for you at no extra charge over running line prices. Consult your local Alexander Smith-Masland Carpet Contractor. He will advise you in the choice of weave to specify. His skill and experience in carpet installation will save your time and your client's money.

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Planned Lighting

- BY LITECONTROL

HERE, in the actuarial department of the Security Life & Trust Company, Winston-Salem, N. C., you see visual health safeguarded by LITECONTROL Planned Lighting . . . which was used throughout the building.

In this case, the right light, in the right amount, is being shed in the right place by means of LITECONTROL No. 5828 2-lamp recessed louvered slimline fixtures. For easy servicing,

louvers are hinged and may be opened from either side with spring-loaded catches.

On your next lighting problem, call in your local LITECONTROL Rep-

resentative for a consultation. It will cost you nothing. Yet, this man's experience in *Planned Lighting* may mean a difference to you in terms of time, trouble and money . . . *saved*.

JOB: Security Life & Trust Co., Winston-Salem, N. C.
 AREA: Actuarial Department.
 ARCHITECTS & ENGINEERS: Macklin & Stinson, Winston-Salem, N. C.
 ELECTRICAL CONTRACTOR: Edman Electric Company, Winston-Salem, N. C.
 WALL FINISH: Cream with light green wall paper.
 CEILING: White.
 FIXTURES: LITECONTROL No. 5828 2-lamp recessed louvered slimline fixtures.
 LAMPS: T1296 Standard Cool White.
 SPACING: 8 feet on centers.
 INTENSITY: Average, 57 footcandles in service.



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 KEEP UPKEEP DOWN

LITECONTROL CORPORATION, 36 Pleasant Street, Watertown 72, Massachusetts

DESIGNERS, ENGINEERS AND MANUFACTURERS OF FLUORESCENT LIGHTING EQUIPMENT DISTRIBUTED ONLY THROUGH ACCREDITED WHOLESALE

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GOOD BUILDINGS DESERVE GOOD HARDWARE



P. & F. CORBIN DIVISION

The American Hardware Corporation
New Britain, Connecticut, U. S. A.

MEMPHIS CHURCH...installs heating and air conditioning system

designed by Frigidaire for utmost flexibility at low cost



LOCATION: Memphis, Tennessee
SECOND PRESBYTERIAN CHURCH: Owner
S & W CONSTRUCTION CO.: Contractor

When the congregation of the historic Second Presbyterian Church of Memphis decided to move from their old location at Hernando and Pontotoc Streets, the overall plan was to erect, on the new 7½ acre building site, a Sanctuary Building, Educational Building, Fellowship and Recreation Building, and a Chapel. The building program was divided into stages, with the Educational Building, shown above, as the first stage.

When the Church's Building Committee reviewed the proposed heating and air conditioning system for this building, its cost seemed to leave no alternative but to eliminate air conditioning entirely. But when the local Frigidaire Dealer devised a plan to provide both heating and air conditioning for only slightly more than the original bid for heating alone—this plan was unanimously approved and adopted.

Since all areas of the church are not occupied at the same time, the building was divided into four separate zones, each under individual control. Therefore, the air conditioning system had to be designed to provide adequate capacity and flexibility for cooling any combination of areas normally in use simultaneously.

Satisfaction with this unique installation was aptly expressed in the following excerpt from a letter written by the chairman of the Building Committee:

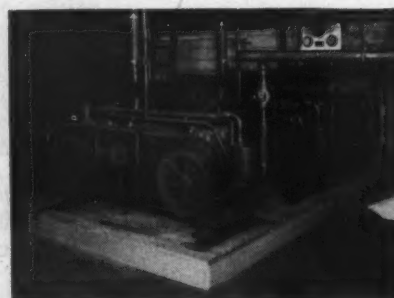
"The membership in the Church has increased approximately 50% between September 9, 1949 and March 31, 1951. It would have been very difficult, indeed, to have provided for the comfort of the congregation and to carry on the many activities of a growing community church had not our congregation had the foresight to install the Frigidaire Air Conditioning and heating system which has been so effective. Hot weather now brings very little decline in our attendance and activity, even though summers normally bring a church program to a low ebb."

A phone call will bring you detailed information on any Frigidaire product or service. Call your Frigidaire Dealer—or Distributor or Factory Branch that serves your area. See Frigidaire catalogs in Sweet's Files or write Frigidaire Division of General Motors, Dayton 1, Ohio. In Canada, Leaside (Toronto 17), Ontario.

Frigidaire reserves the right to change specifications, or discontinue models, without notice.



The Educational Building, occupied by the congregation in September, 1949, was designed for use as a temporary Sanctuary for worship services and the remainder for the Sunday School and administrative offices.



Three 20 hp Frigidaire compressors, four Frigidaire air conditioning units, a Frigidaire evaporative condenser and controls provide the efficiency and flexibility to do a highly successful air conditioning job.

FRIGIDAIRE America's No. 1 Line of Refrigeration and Air Conditioning Products

Refrigerators • Electric Ranges • Home Laundry Equipment
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FOR COMPLETE ARCHITECTURAL UNIFORMITY

The new UNILINE features the clean, simple appearance demanded by modern design standards. It blends harmoniously with all interiors. Because this one line meets your wall plate needs, architectural uniformity is assured. Specification problems are greatly reduced — especially when UNILINE is used in combination with our complete line of Architectural Specifications Grade Standard and interchangeable wiring devices.

These attractive, easy-to-clean wall plates are available in brown Bakelite and in Ivorylite. The backs are reinforced providing extra strength. **You need just one line — if it's UNILINE!**

HERE'S IMPORTANT INFORMATION . . .

. . . about the latest developments in home wiring. Here are dozens of new ideas to help you plan really modern electrical convenience that makes more satisfied customers and more new customers. Send today for the fully illustrated booklet, "Electrical Planning In The Home," prepared for you by the Good Housekeeping Building Forum. For your free copy — and for more complete information about UNILINE wall plates and other wiring devices, just write to 1911 Laurel Street, Hartford 6, Conn.



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ENCLOSED SWITCHES



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BROW-HART & HEGEMAN ELECTRIC CO.
HARTFORD 6, CONNECTICUT

TRUSCON...a name you can **build** on

steel windows

for every
schoolroom
service



The Truscon Maxim-Air Steel Window provides free circulation of air in rain or shine. Available in widths up to 10'0" and in heights up to 12'0". All ventilators are top-hinged to open out, are mechanically controlled, and open or close simultaneously.

Photo above: Truscon Maxim-Air Steel Windows in Harper Elementary School, Evansville, Indiana. Ralph Legeman, Architect. Bauer Bros. Construction & Supply Company, Contractors.



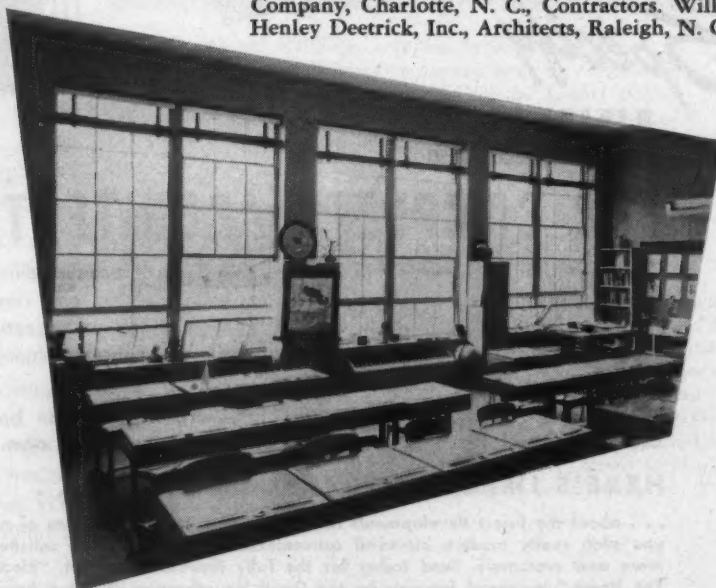
The Truscon Series 138 Double Hung Steel Window with sill ventilator provides convenient, draft-free ventilation so important in schools. Standard sizes provide ample window height for normal classroom lighting needs. Fully weatherstripped, easy operating.

Photo below: Truscon Series 138 Double Hung Steel Windows with sill ventilators in Southern Pines School, Southern Pines, N. C. Laxton Construction Company, Charlotte, N. C., Contractors. William Henley Deetrick, Inc., Architects, Raleigh, N. C.

The new Truscon Intermediate Classroom Window has been used in many installations under a great variety of conditions.

Its unusual advantages are (1) increased utilization of light, (2) better control of ventilation, (3) marked economy in original cost, (4) superior maintenance from the standpoint of window washing and replacement of broken glass.

Typical installation, using upper lights of diffusing, glare-reducing glass, is the Bath Township School, Allen County, Ohio, shown above. Robert A. Helser, Architect. Bitler Brothers Construction Co., Contractors.



Write for detailed literature on Truscon Classroom Windows. See SWEET'S for complete details on all Truscon Steel Building Products.

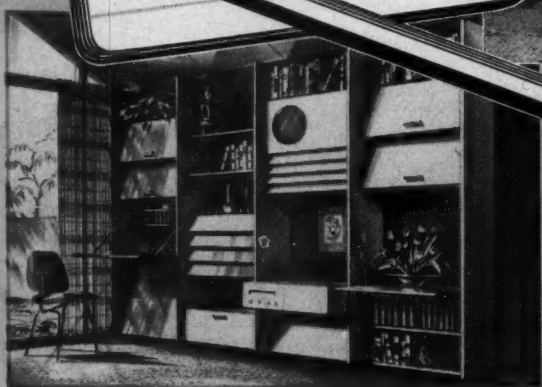
TRUSCON® STEEL COMPANY

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Youngstown 1, Ohio



Ingenious shelf-door wardrobe saves space by use of movable shelves inside plywood doors. The same principal is easily applied to other-than-bedroom storage units. Design by E. W. Hanson, Stillwater, Minn., awarded first prize in "Better Living Home" contest—history's biggest, most successful architectural competition. Plans available; see below.



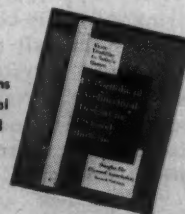
There's storage to spare in this eye-appealing built-in. Because it's plywood it can't be dented, chipped by hard knocks. Note how it eliminates conventional desk, radio, chest of drawers. Design by Project Planners & Designers, New York City.

IT'S EASY to add client-pleasing distinction to your homes—at low cost—with space-saving, work-saving built-ins. Even modest priced homes can be lifted above the ordinary . . . given far more *usable* floor space with plywood built-ins. And with plywood you have *complete* freedom of design. No tedious juggling to fit "stock size" elements into a cohesive unit. No limit to size, design, finish or color—you plan the built-in to fit the home, not the other way around. Versatile and adaptable, plywood has both appearance and structural value. It's splitproof, puncture-proof, easy to cut, fit and fasten . . . *the logical material for every built-in.*



Outdoor storage is a blessing in garage and basement-less homes. This Exterior plywood unit holds garden, patio equipment—serves as windbreak to add patio privacy. Designers Robert A. Little & Associates, Cleveland, Ohio.

Write today for the idea-full Portfolio of Plywood Built-Ins. Contains over 50 reproductions of winning designs in national "Better Living Home" Contest. Also available: Plan and specification folder for shelf-door wardrobe shown above. For your free copies write (USA Only) Douglas Fir Plywood Association, Tacoma 2, Washington.

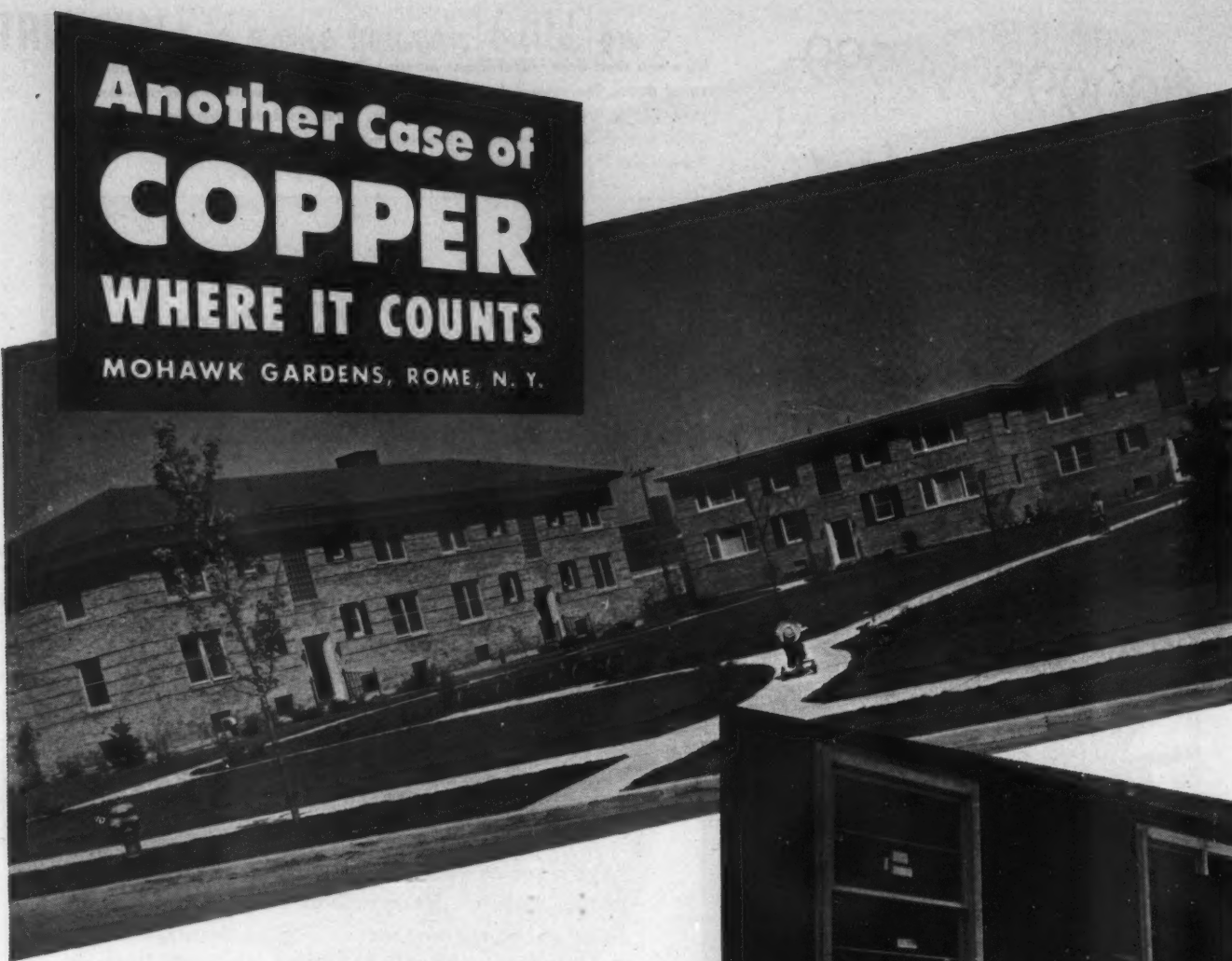


Douglas Fir Plywood

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MOHAWK GARDENS, ROME, N. Y.



The very scarcity of copper has served to point up the many merits of this metal better than anything we might say about it. For, when architects, builders and contractors have tried to find a substitute, they soon discovered many places in building construction where there just *isn't* any substitute. And they don't hesitate to tell us so.

Two mighty important copper spots are in flashing roofs and windows. That's why, when Revere Copper was available it was used to flash the roof and windows of the apartments at Mohawk Gardens.

Although now limited, you can still get Revere Sheet, Strip and Roll Copper for flashing those places where enduring performance really counts.

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TWO OF THE 1949 WINDOWS at Mohawk Gardens, Rome, N. Y., that are flashed with Revere Copper. The lasting qualities of copper have been proved over the centuries. It is readily worked to fit any contour and is easily and speedily applied by experienced contractors, in accordance with Revere's recommended techniques.



LET THE RAIN DRIVE and the snow blow, water will not seep through these window sills flashed with Revere Copper. Roof is flashed with Revere Copper, too; while this enduring metal is also used for gutters and downspouts. Architect—Harold G. Rice. Builder—A. H. Pearsall, Incorporated. Roofing and Sheet Metal Contractor—Finster Bros., Inc. All are located in Rome, N. Y.



ABOVE: When seats are closed almost every foot of floor area is "recovered" for regular use.

LEFT: Medart "Two-Level" installation utilizes both balcony and gym floor for maximum audiences.

7 major reasons WHY YOU SHOULD SPECIFY **MEDART** TELESCOPIC GYM SEATS

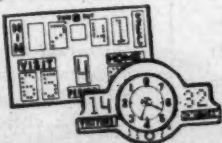
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Every style—standard or special

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Basketball and Football



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A complete line meeting all Official Standards

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A "must" in all phys-ed programs

Ask for Literature



THEY SAVE FLOOR SPACE! Unlike fixed seating, when Medart seats are closed, virtually every foot of floor area is made available for regular class work.

THEY'RE SAFE! Like a steel skyscraper skeleton, the understructure of Medart seats stands alone and supports the entire occupied load on four vertical steel uprights for every row that put the weight on the floor, not the wall.

THEY'RE STRONG! Authoritative tests under loads of 400 pounds per linear foot indicate no apparent deflection. Stability tests show no side-sway at peak of stress.

THEY SAVE MONEY! Medart seats cost less than knockdown or built-in seating. In addition, they provide quickly available, ample accommodations for large and overflow crowds that mean important extra revenue.

THEY'RE CONVENIENT! Exclusive "Floating Motion" design makes the largest seat section easy to handle. Another Medart advantage allows only 1 or more rows to be opened as usage requires, while other rows remain closed.

THEY PROTECT FLOORS! Seat sections roll open or closed on rubber cushioned rollers that retract and let the "live" load rest on large steel shoes when seats are occupied. Medart seats avoid caster depressions in highly finished floors.

THEY'RE GOOD LOOKING! Wood parts are light natural-color, finished in clear lacquer that complements every trim, neat modern gym. Baked-on enamel protects steel parts.

Write for complete Catalog

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For 78 Years The Standard Of Quality



Surfaces harder-than-steel are Universal-Rundle



Nationally advertised by U/R as the fixtures that never "lose face"!

Here are surfaces with a brilliant, highlighted sparkle that catches the eye . . . and opens the way to sales! That's one reason "Universal-Rundle" is the fastest growing name in the bathroom fixture field.

But that isn't all. These scintillating surfaces are actually harder than steel . . . super-resistant to scratching, chipping and crazing.

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U/R, appearing in leading magazines such as the SATURDAY EVENING POST and BETTER HOMES & GARDENS — featuring decorator-designed baths in full natural color photography. And for the "new" in '52 — watch Universal-Rundle!

What Every Plumber Should Know! If you haven't yet had your copy of the new U/R Catalog, write today. Complete line of bathroom and kitchen fixtures, with plans, drawings, specifications, helpful data for the plumber. (See the U/R line in Sweet's Builders File, too!)

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Color Quality by U/R! Makers of the finest colored ware, since originating it a quarter century ago.

The Bond that's "For Keeps"! The bond between U/R fixture body and surface resists chipping for life.

Universal-Rundle Leads! These and many other industry "firsts" were U/R-originated: colored vitreous china, one-fire tunnel-kiln firing, complete laboratory control of production, etc.



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UNIVERSAL-RUNDLE CORPORATION, DEPT. 20, NEW CASTLE, PENNSYLVANIA
Plants in Camden, N. J.; Milwaukee, Wisconsin; New Castle, Pennsylvania; Redlands, California; Hondo and San Antonio, Texas

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Power Plant Floor

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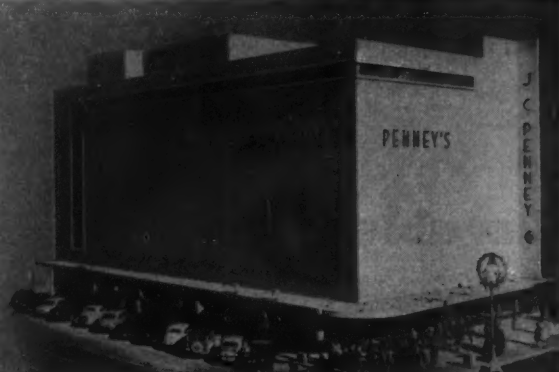


AR-51

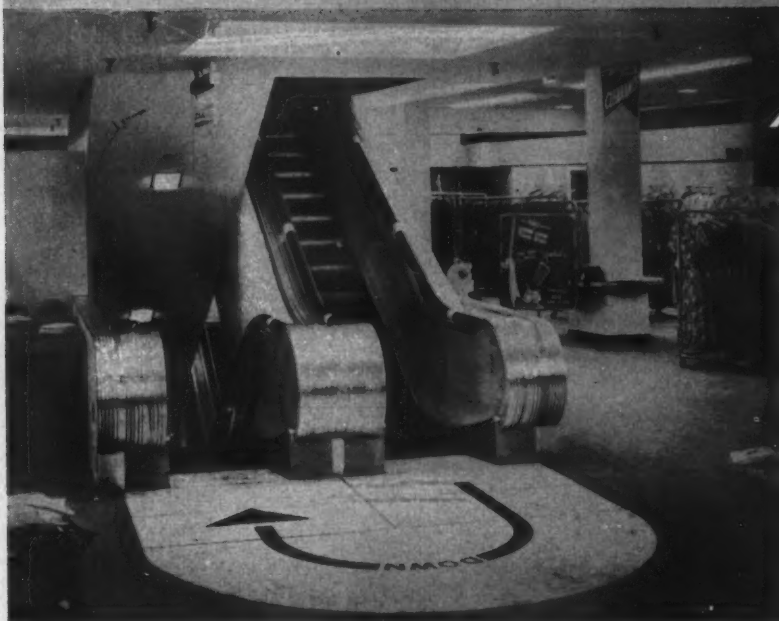
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Architects and Engineers:
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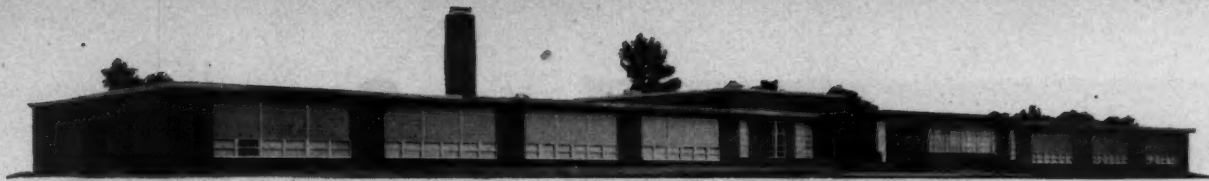


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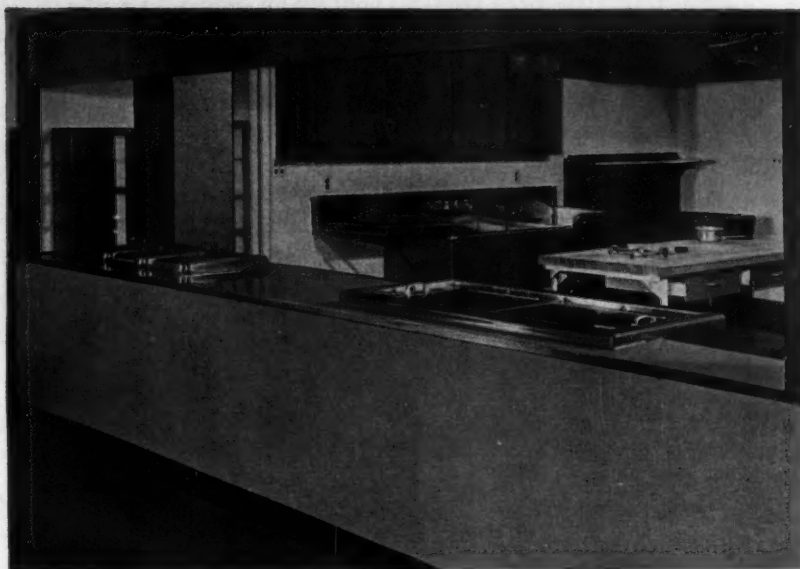
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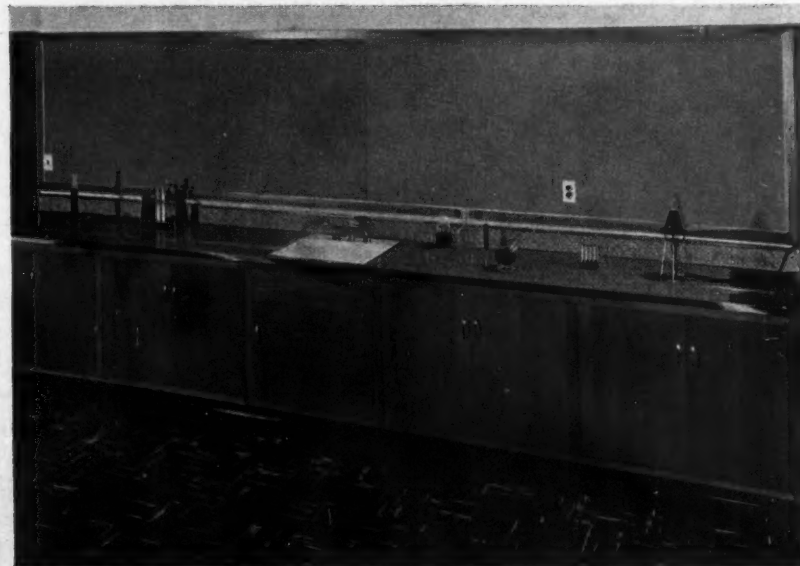
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Check your current Sweet's Architectural File 28E/F for detailed information about Fairbanks-Morse products. If you would like to have handy reprints of this section, we will be glad to supply them.

Ask also for the new Fairbanks-Morse catalog on Generating Plants—used for standby emergency light and power service by hospitals, theaters, airports, etc.

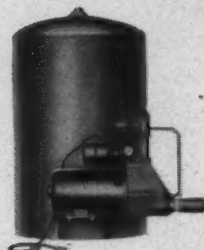
For both reprints of Sweet's Architectural File section and the new Generating Plant catalog write R. W. Lewis, Room 413, Fairbanks-Morse Building, 600 S. Michigan Ave., Chicago 5, Ill.



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a name worth remembering

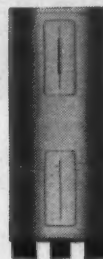
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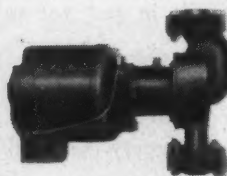
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Sump pumps—beat seepage problems; protect against flash floods. Fully automatic, reliable. Four models.

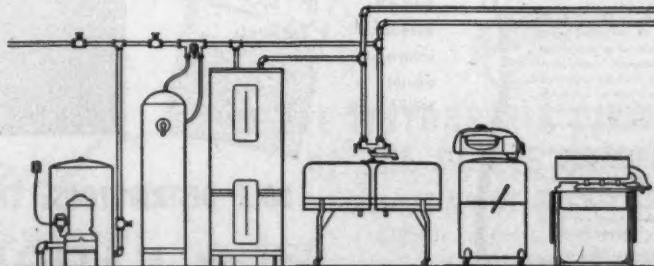


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Generating sets—for home, business and industrial installations away from high line service. 600 to 40,000 watts.

Shown is a suggested piping hook-up for a complete Fairbanks-Morse water service and laundry equipment unit. Water service includes a water system, softener and heater. Water outlets may be installed whether or not the home owner desires to have the entire "packaged ensemble" installed at one time, or to install each piece separately as his needs and finances permit.





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Now Mengel offers you *Mahogany* Flush Doors at remarkable savings.

You can equip any building with these beautiful African Mahogany doors for less than comparable doors faced with many domestic woods!

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Choose Mengel Mahogany Doors and you get doors of unbelievable beauty. In both Hollow-

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Plywood Division, Louisville 1, Ky.

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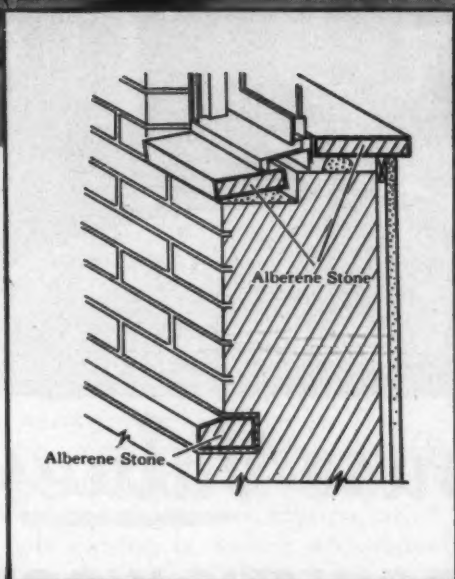
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*Tripler General Hospital, U. S. Army Medical Dept., Hawaii
— Architects: York and Sawyer, New York City. 1½" Alberene slip sills.*



Detail showing 1½" thick slip sill with 1¼" stool and 2¼" belt course.

sills, stools, and trim of **ALBERENE** stone are **DURABLE and ECONOMICAL**

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the
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soft shadows

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ALL WHITE OUTSIDE—to reflect room light upward, brighten the ceiling and soften brightness contrast.

Easier to clean—reduces maintenance. Air-flow Channel circulates air currents for longer ballast life.

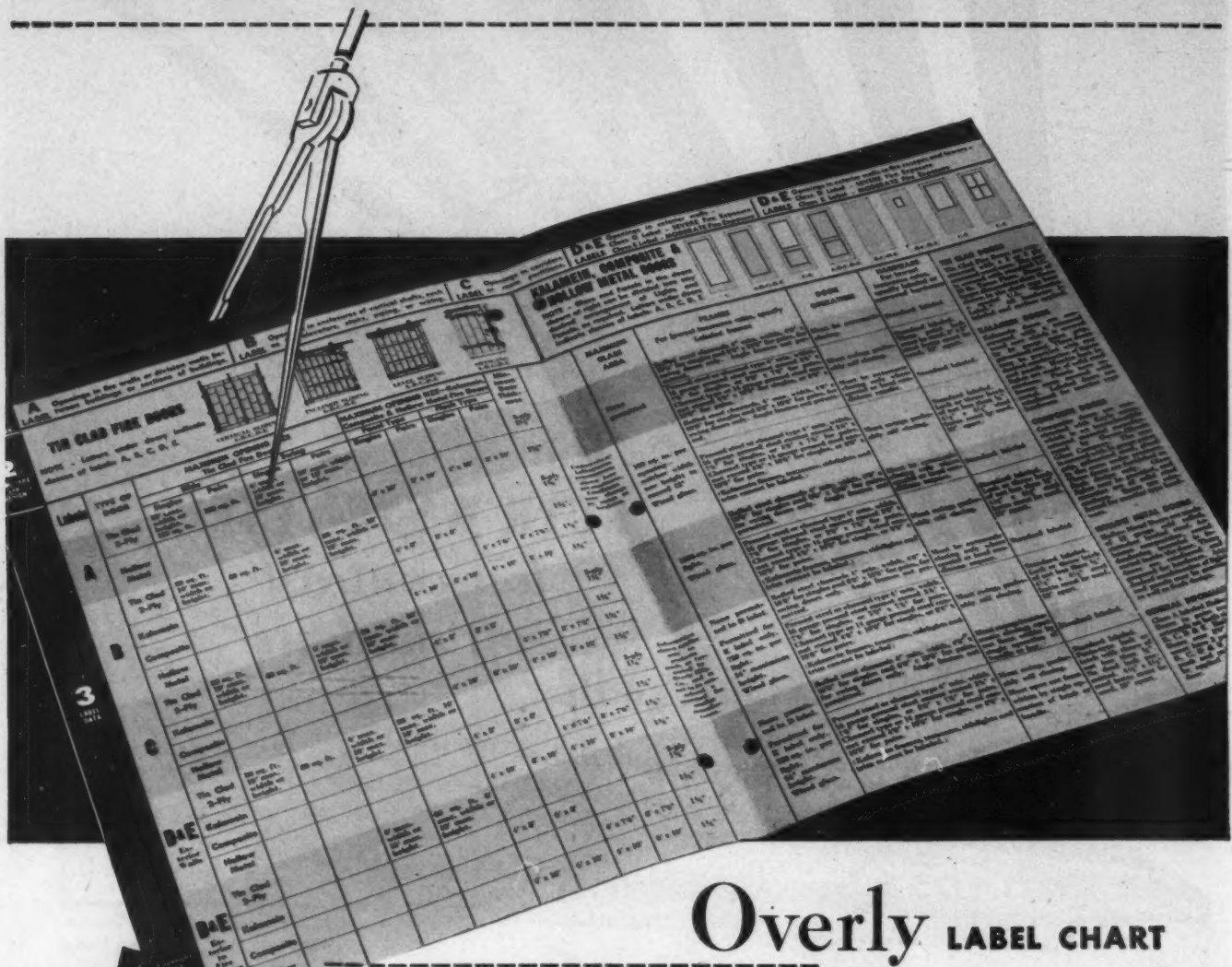
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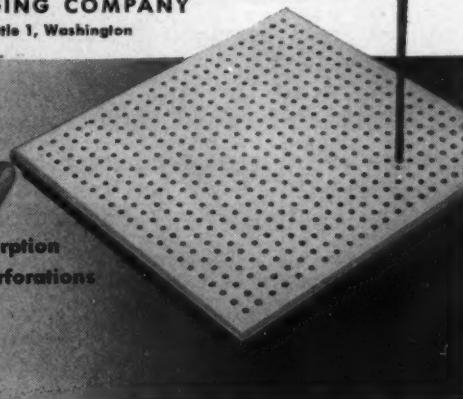
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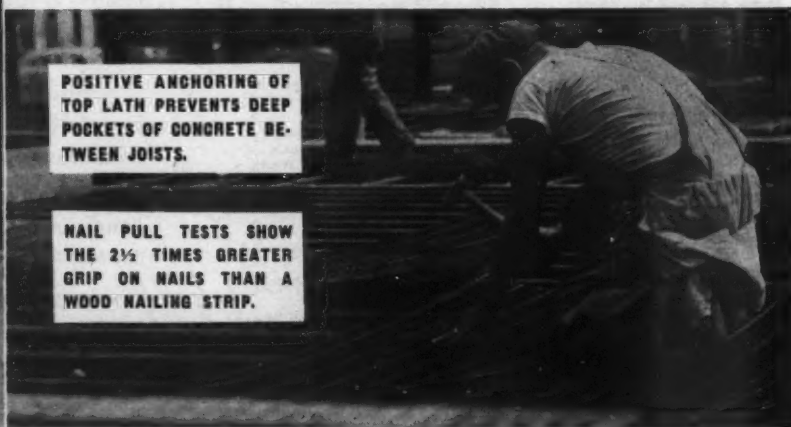
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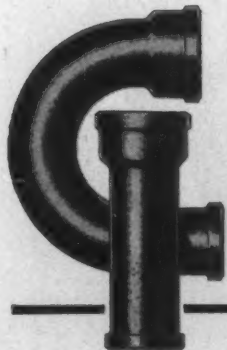
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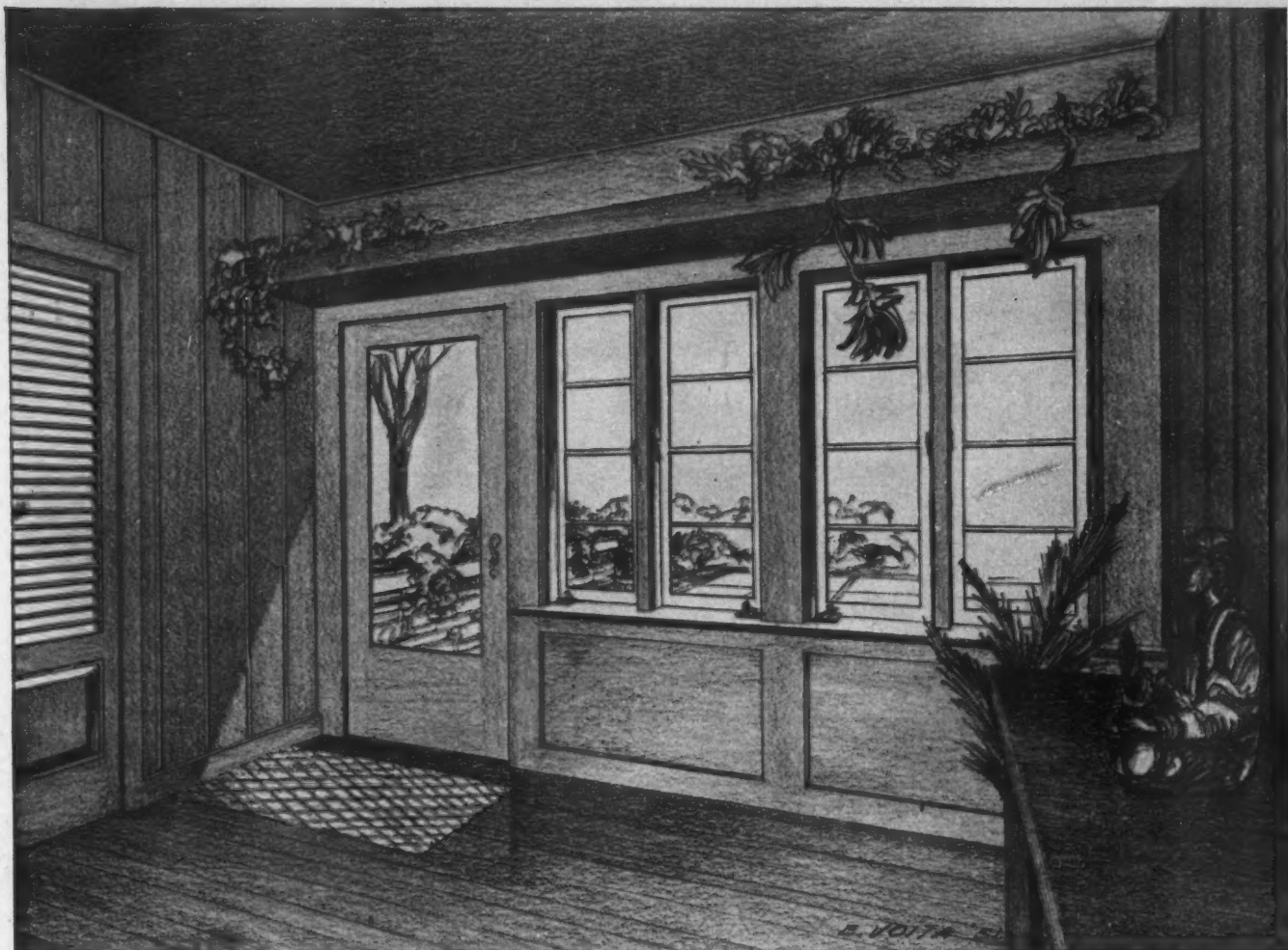
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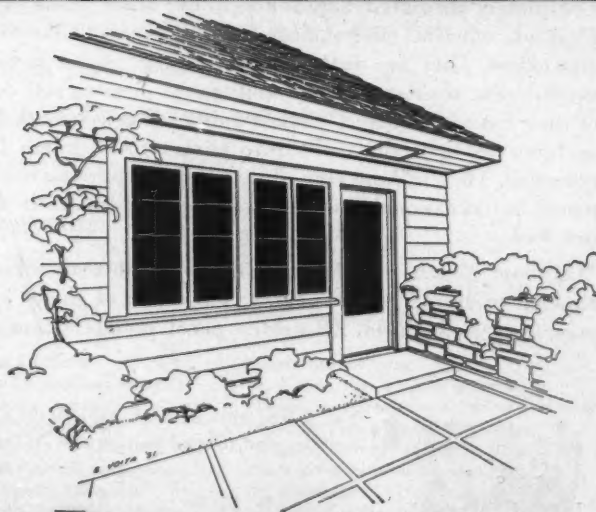
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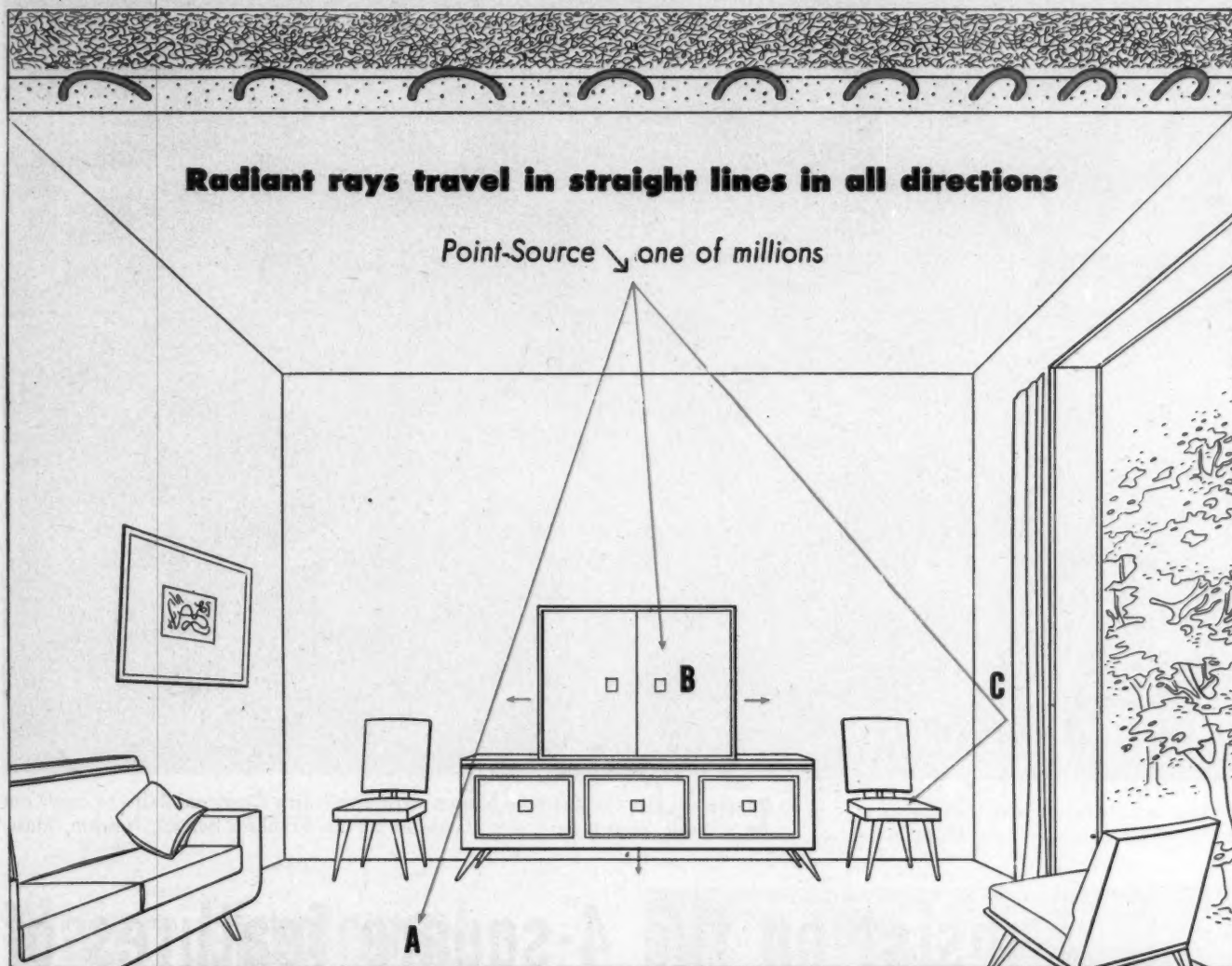
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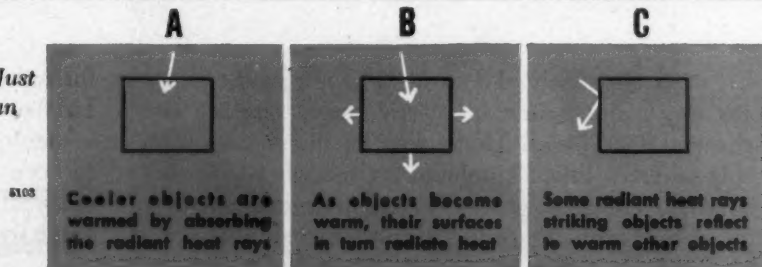
To simplify this illustration only a single point-source of heat is used. Actually, there are countless millions of such points on every radiant heating surface.



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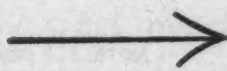
1. Here's just one example of how attractive Nairn Linoleum helps to carry out a motif. Shown here is a classroom at the Franklin School, Newton, Mass.

insist on the 4-square features of

Let's talk about school flooring. The important things are easy maintenance, quiet resilience, long life and cheerful good looks. That's why so many architects choose Nairn Inlaid Linoleum for schools all over the country. They know that Nairn's true resilience reduces foot traffic noise to a minimum . . . that Nairn's crevice-free surface—so quick and easy to clean—af-

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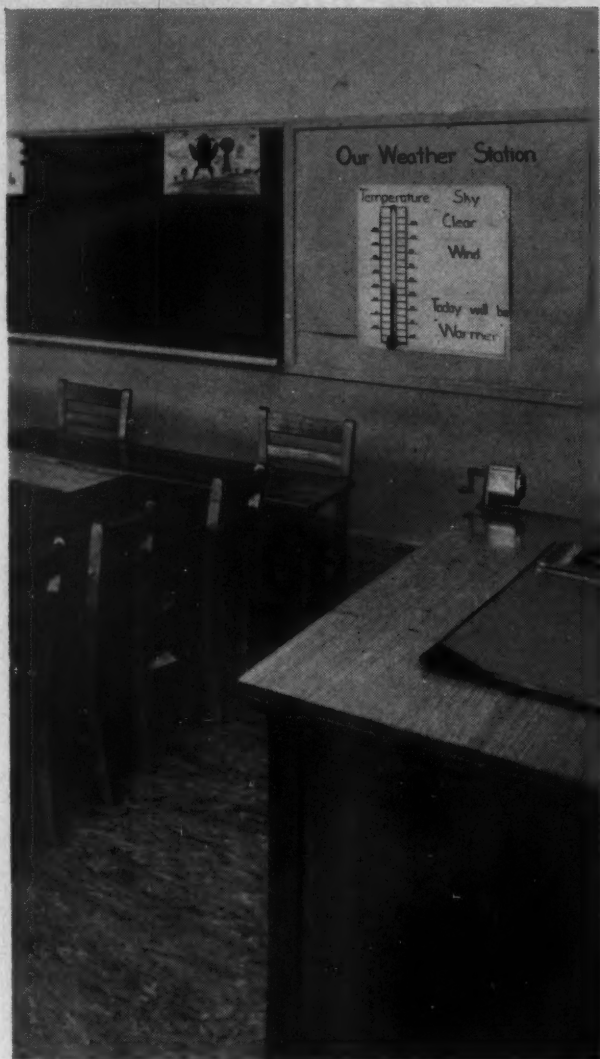


NAIRN LINOLEUM

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school flooring problems...



2. The school corridors at the Wall Township Grade School, Monmouth County, N. J., carry a constant flow of heavy traffic. And that's where Nairn *proves* its economy with extra-long life, quick and easy maintenance.



3. In the classrooms of the Euclid Senior High School, Euclid, Ohio, Nairn Linoleum's crevice-free surface assures sanitary protection at its best . . . makes for quick, thorough cleaning.



4. This installation in the kindergarten of the Moccasin School, Buchanan, Michigan, again demonstrates the flexibility of Nairn Linoleum to reproduce the architect's design for an interesting, special-purpose floor.

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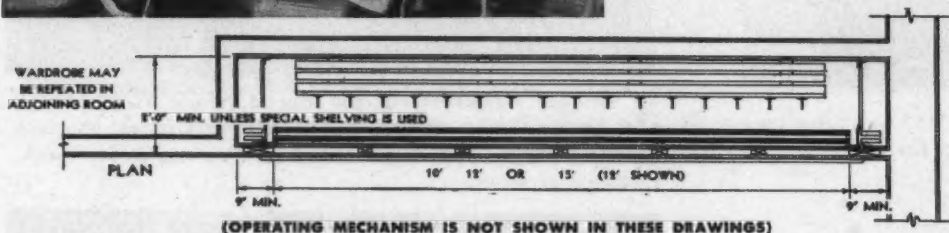
OPENS
FULL WIDTH

OPERATES FREE
OF CLOTHING

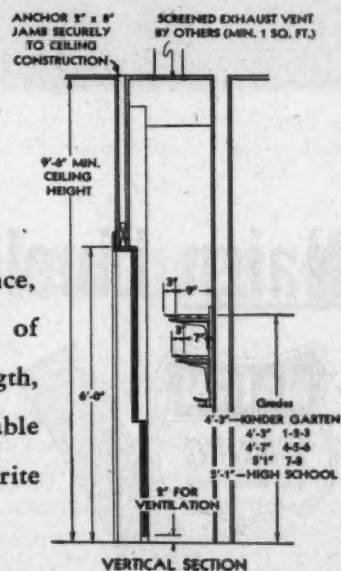
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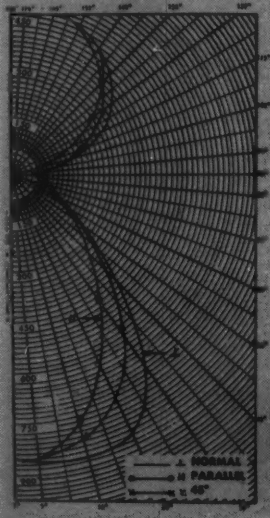
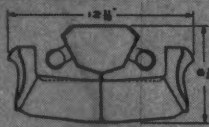
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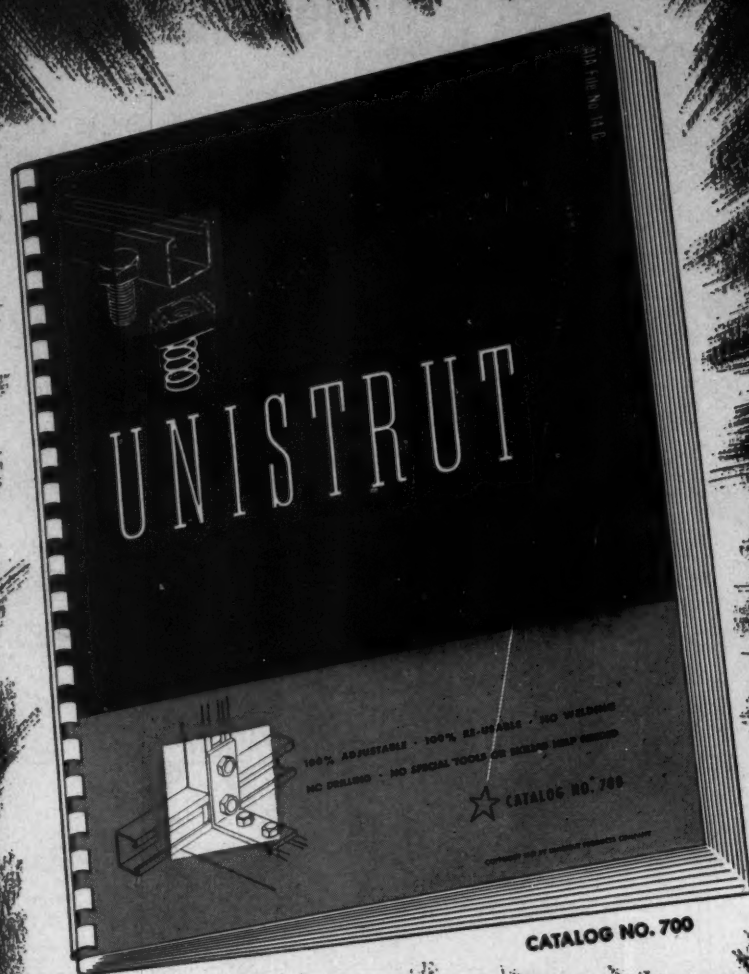
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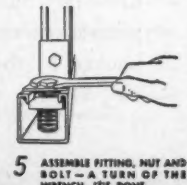
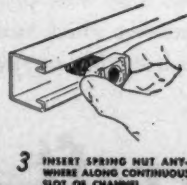
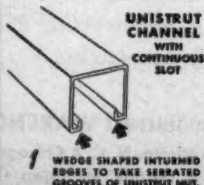
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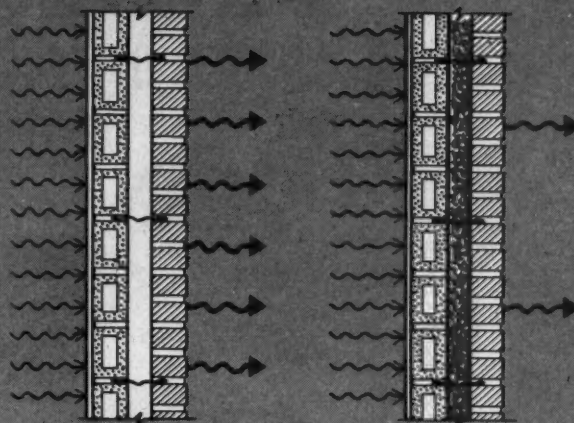
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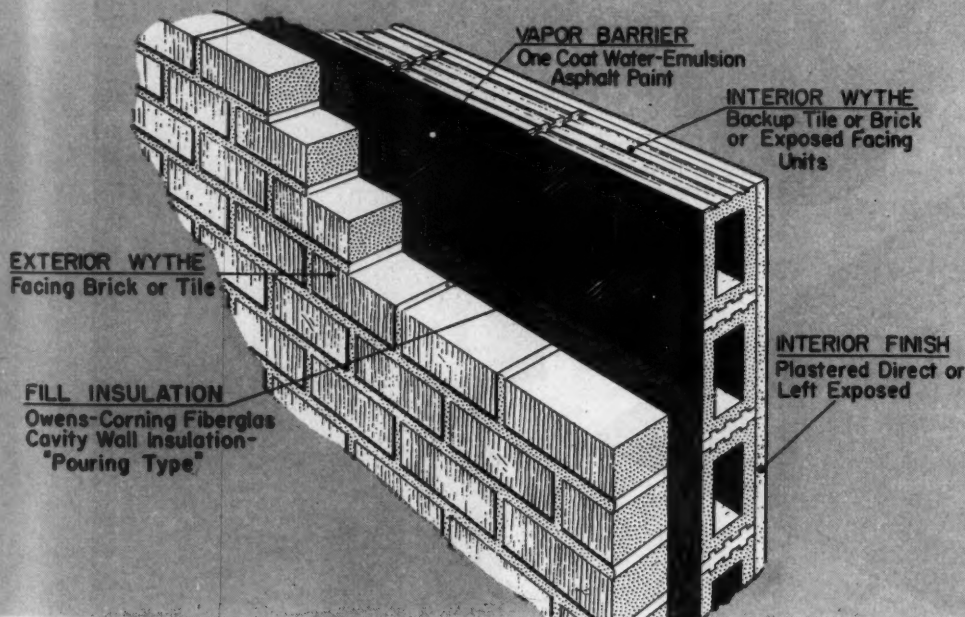
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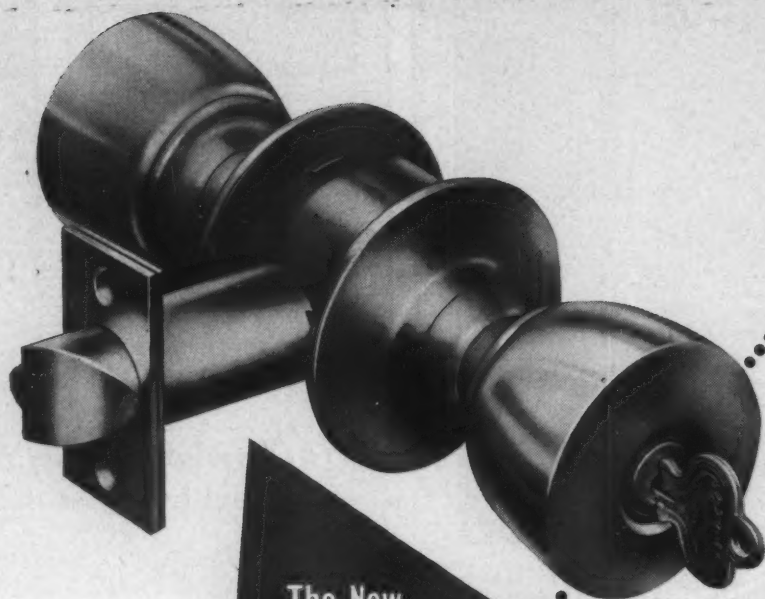


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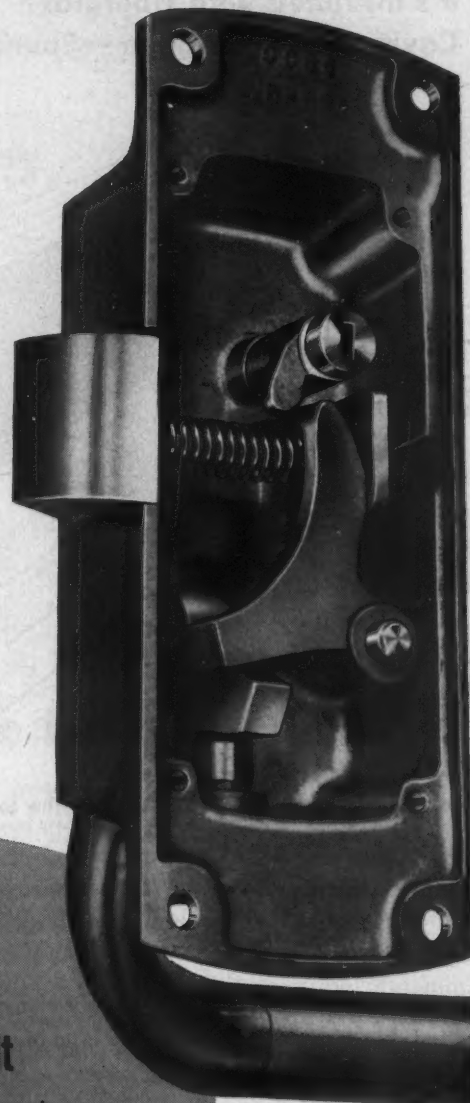
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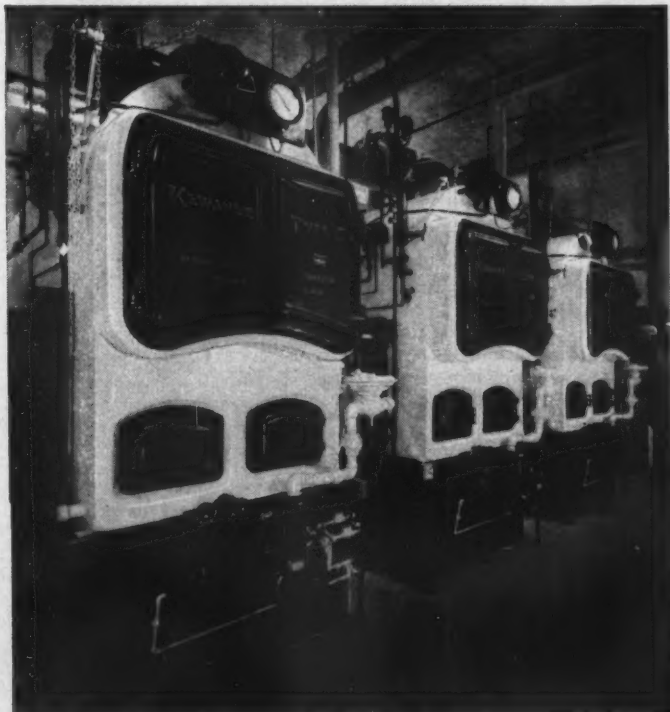
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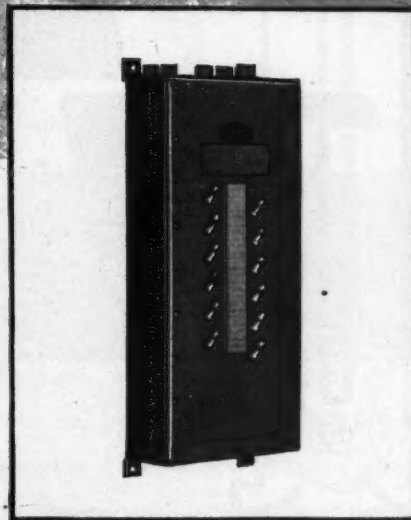
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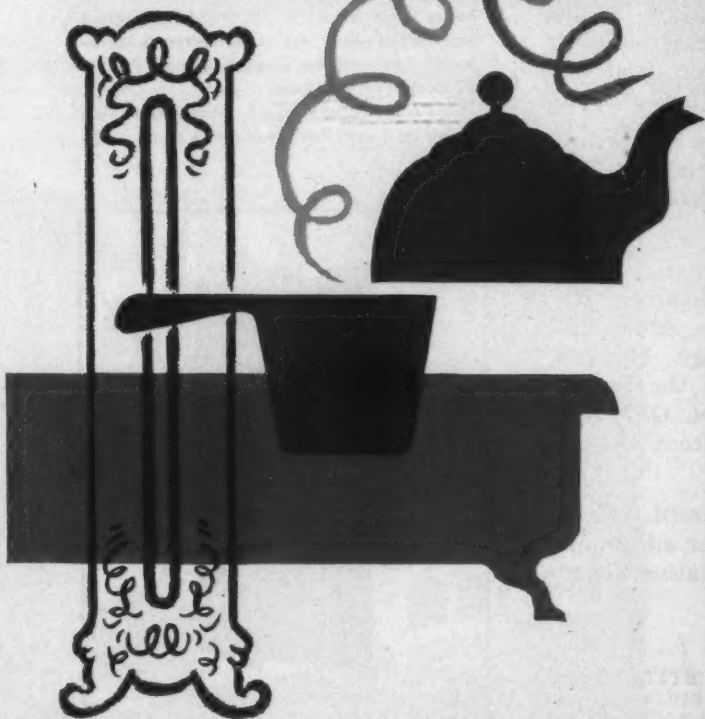
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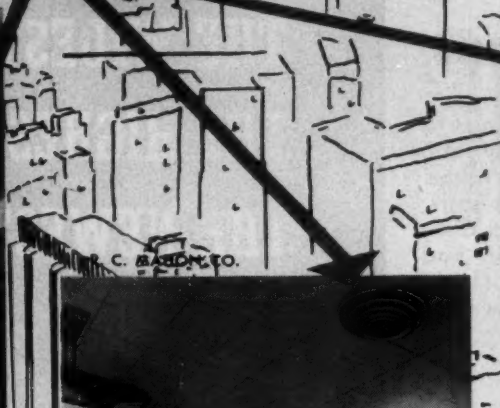
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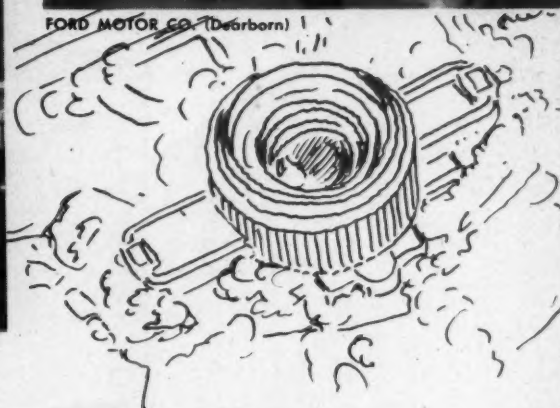
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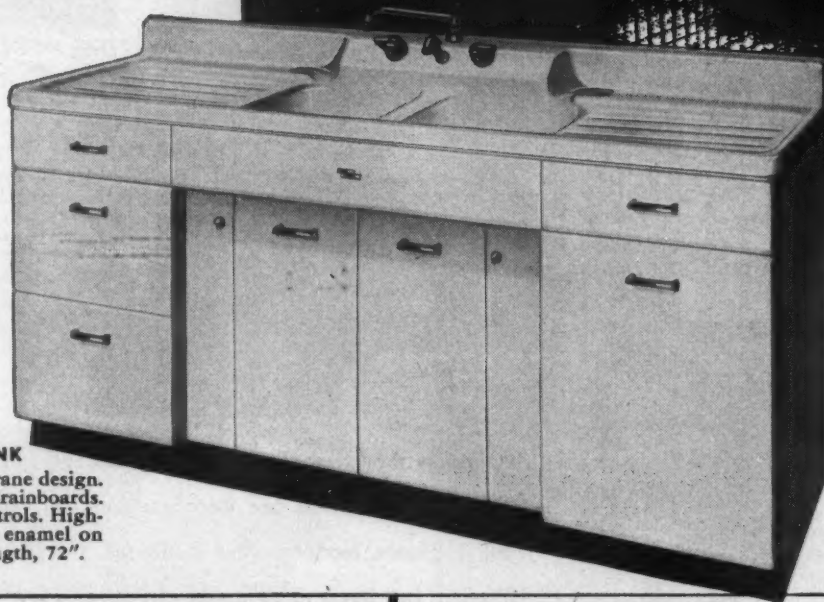
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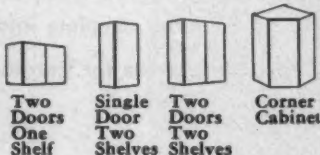
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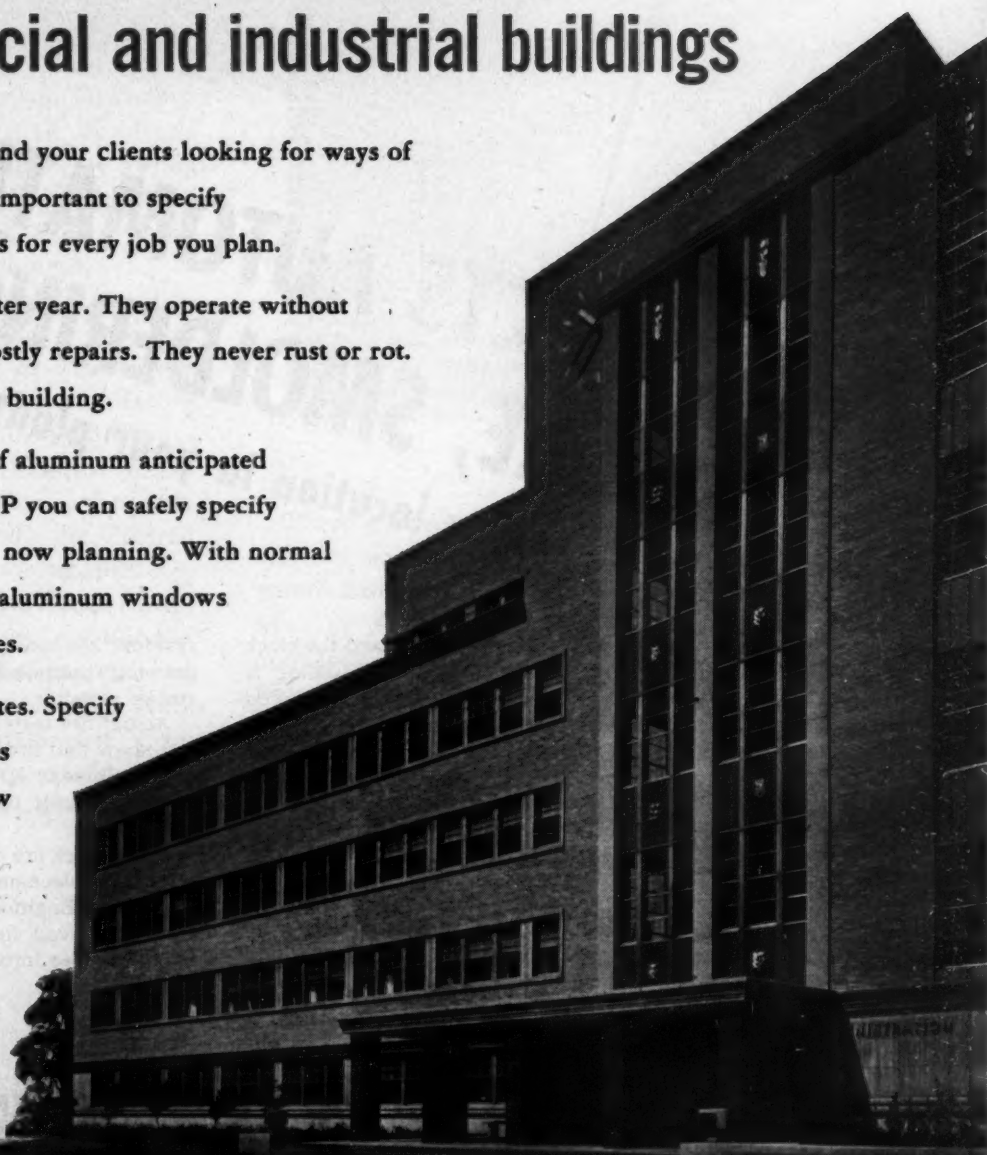
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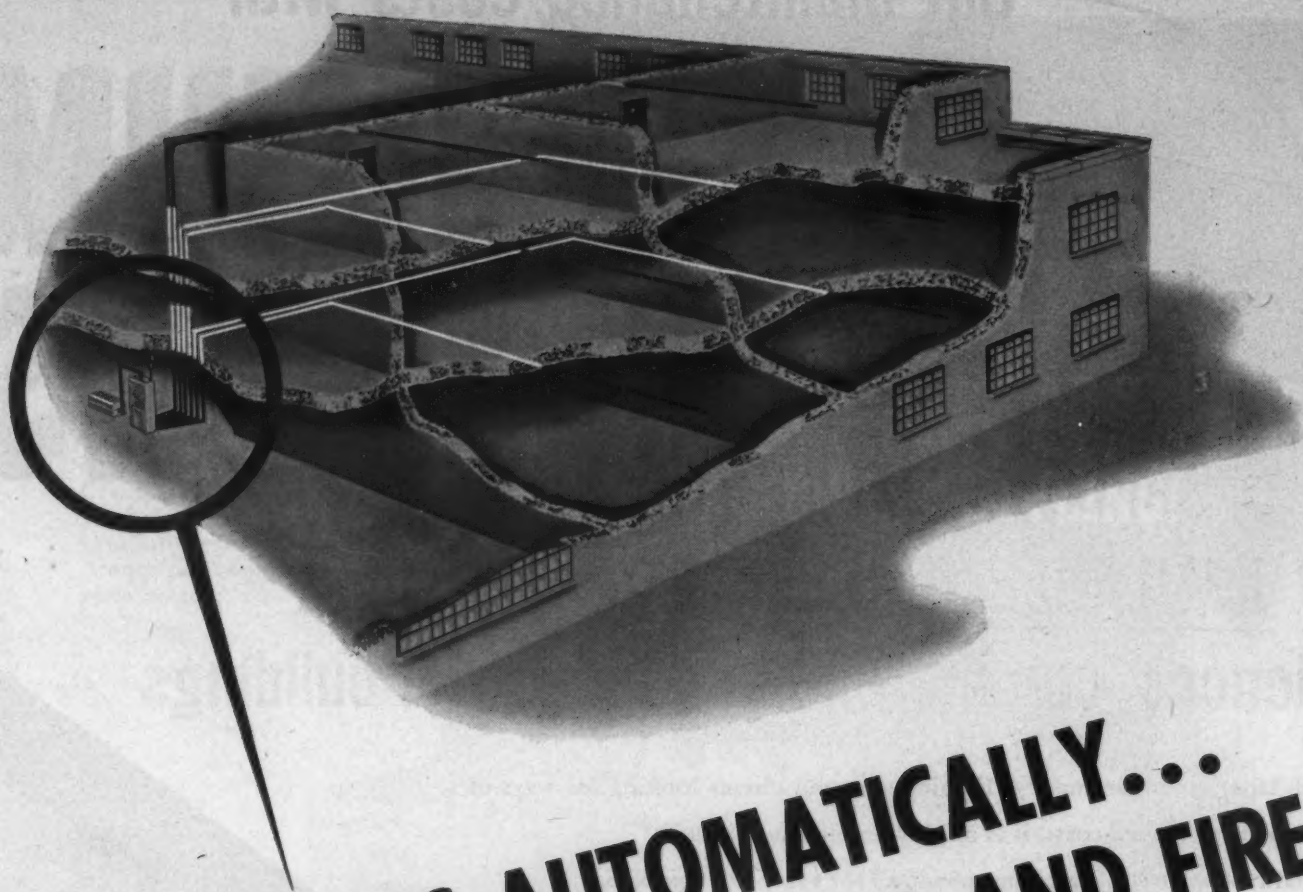
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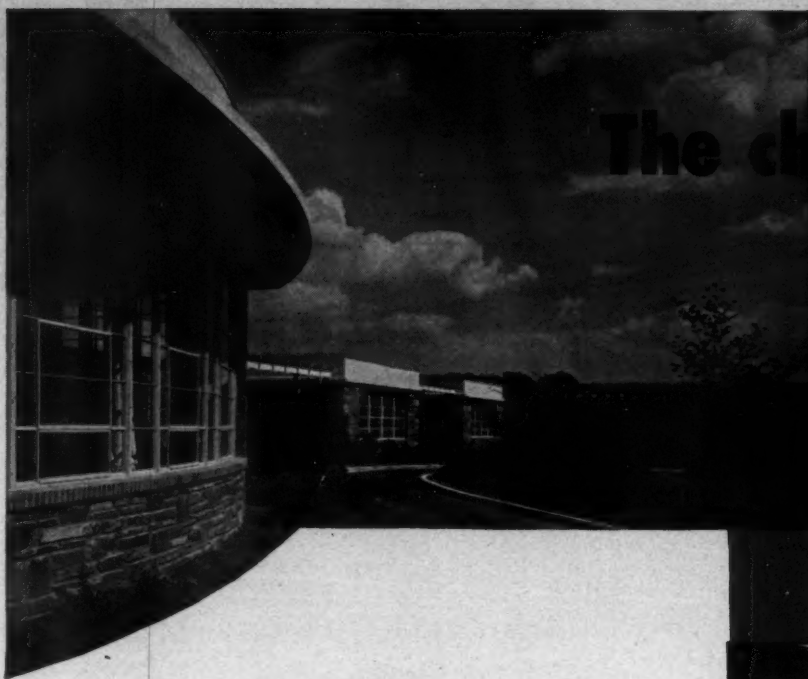
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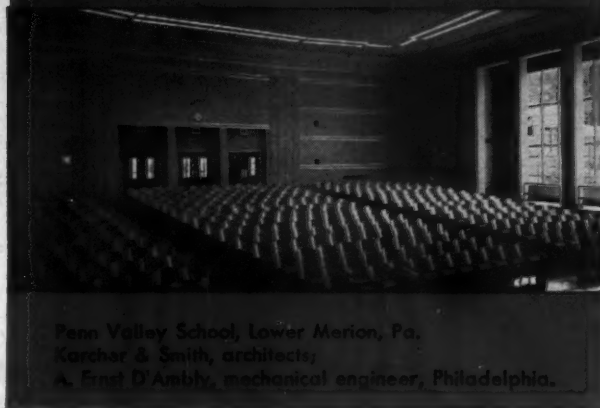
year after year

WILL BE EQUIPPED WITH

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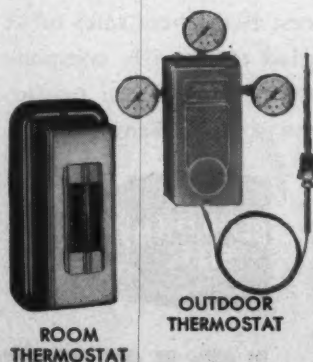
At Penn Valley, a panel heating system, serving the entire building except the gymnasium and auditorium, is designed to maintain a temperature of 60°F. when the ventilating units are not in operation. Johnson's distinctive "Weather-compensated" Control maintains the proper water temperature in the panel heating coils, to secure exactly the desired amount of heat, as the outdoor temperature varies. Johnson thermostats in 67 rooms, operate Johnson hot water valves on booster heaters, to secure the required room temperatures when the building is occupied. Here again, Johnson "Weather-compensated" Control maintains the proper temperature of the hot water supplied to the heaters, as demanded by the outdoor temperature.



Penn Valley School, Lower Merion, Pa.
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There are five central heating and ventilating systems, one each for classrooms, auditorium, gymnasium, cafeteria and office suite. Johnson Master Thermostats provide "Proper Sequence" Control, through Johnson low-limit instruments which operate. Johnson valves and dampers in each system.

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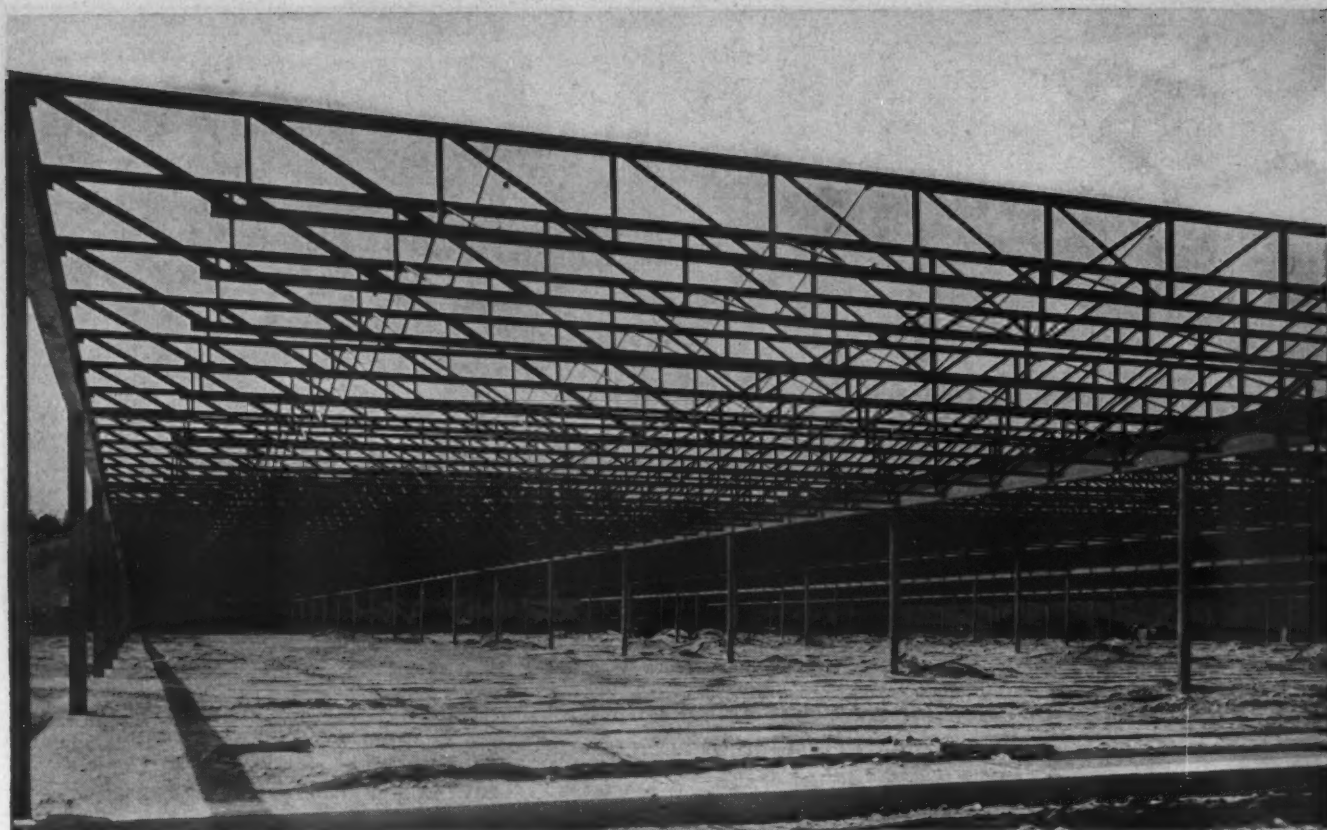


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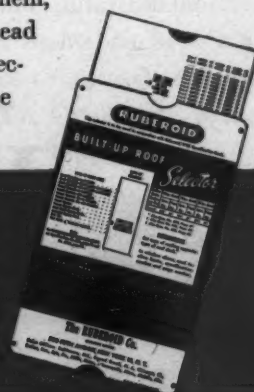
*Ruberoid Built-Up Roof Specification 203

Something new is arising in suburban developments . . . one-story "dream schools" that combine indoors with outdoors, to provide intimate, friendly, colorful classrooms.

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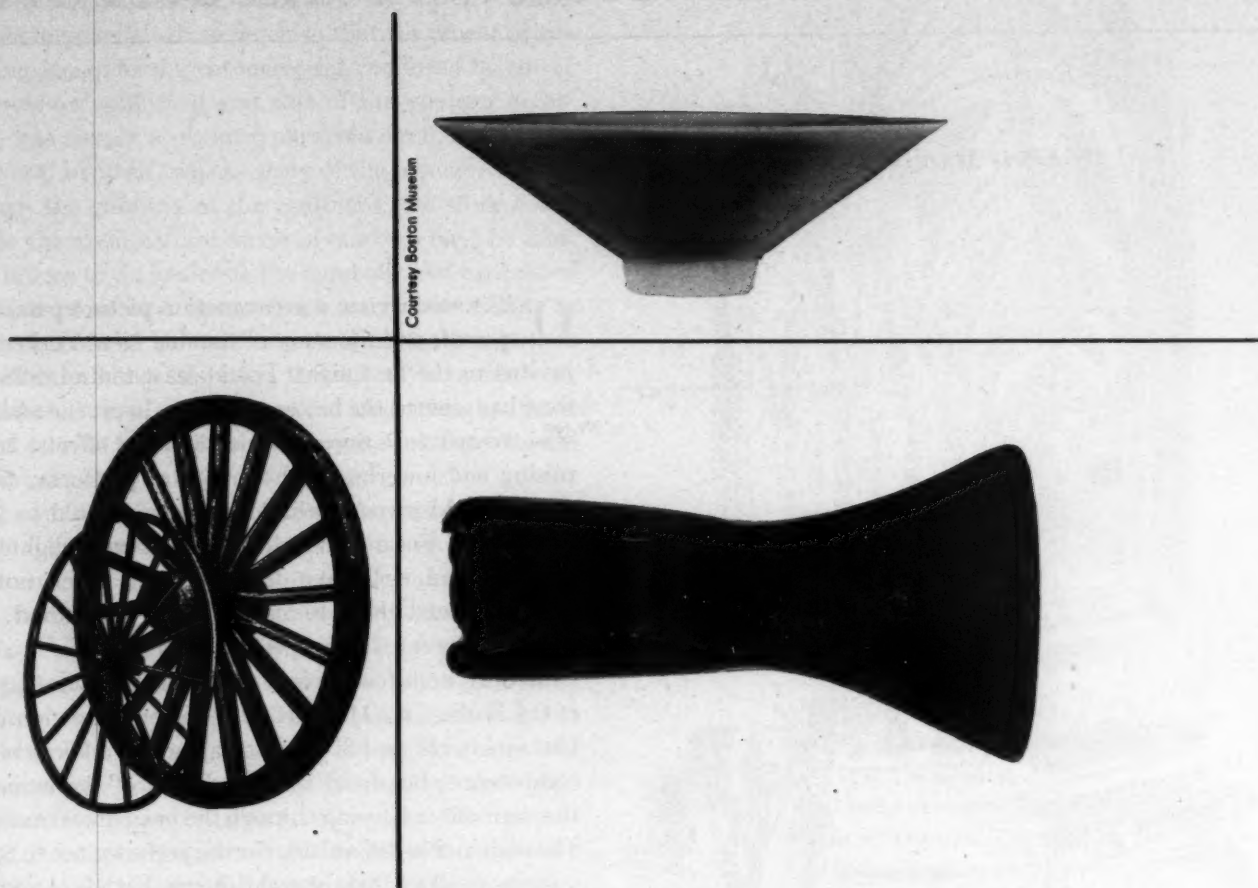
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New Canaan (Conn.) Elementary School. Architect: Sherwood, Mills & Smith, Stamford, Conn. Gen. Contractor: F. D. Rich Company, Stamford, Conn. Roofing Contractor: Max Gottfried Co., Inc., Stamford, Conn.



DESIGN FOR TOMORROW

AN AX HEAD of the Bronze Age, wagon wheels, a Chinese bowl of the Sung dynasty, are reminders that design occasionally achieves an ageless quality.

In architecture, today, is there anything comparable?

The fact is that architecture is being seriously questioned. It is said to be overbalanced with technology, missing something of the artistry of the objects above. It is said to be too intellectual for general human response. Questioning of this kind, once considered romantic nonsense, has now reached the inner circles of architecture.

RECORD editors have long been conscious of a widespread hunger for discussion, and have been preparing a series of articles with the general theme of humanism in architecture. John Burchard's great convention address (July issue of the RECORD) was an appetizer not to be missed. Henry-Russell Hitchcock (August) carried it a bit farther with his discussion of the International Style. In this issue Lewis Mumford adds a heavier item, in his own well-known style. Other famous authors and practicing architects are busy on further articles, many with unpredictable incisiveness.

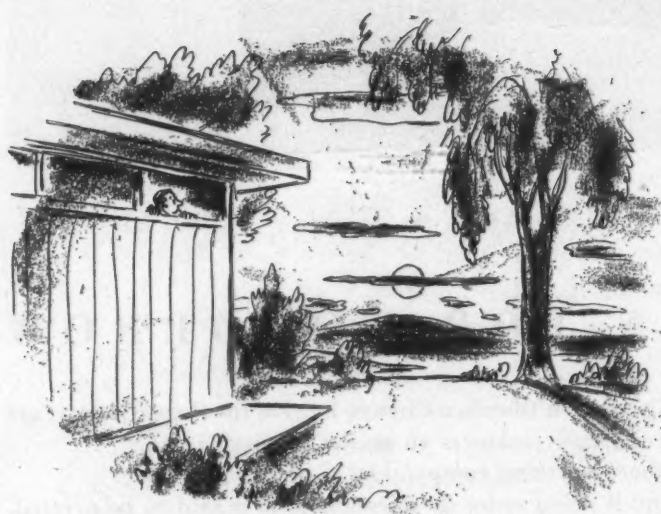
We do not promise that every single item will be palatable to every reader. We do offer full discussion on both sides of any arguments that develop. There will also be opportunity for open discussion; readers are invited to join in whenever they feel moved to comment.

It is our hope that the RECORD's series (programmed to continue indefinitely) will help not only to clarify philosophical aims, but also to translate those into design achievements.

The Editors — E. G.

FUNCTION AND EXPRESSION IN ARCHITECTURE

By Lewis Mumford



"We, today, know that the machine represents only a fragment of the human spirit"

ONCE UPON A TIME a great motion picture palace was opened; and an array of notable New Yorkers was invited to the first night. For at least ten minutes, but for what seemed the better part of an hour, the audience was treated to a succession of lighting effects, to the raising and lowering of the orchestra platform, and to the manifold ways in which the curtain could be lifted and parted. For a while, the audience was delighted by the technical virtuosity displayed: but when nothing further seemed about to happen, they were bored: they were waiting for the real performance to begin.

Modern architecture is now in a state similar to that of the Radio City Music Hall on the opening night. Our best architects are full of technical facility and calculated competence; but from the standpoint of the audience, they are still only going through the mechanical motions. The audience is still waiting for the performance to begin.

Now, in all systems of architecture, both function and expression have a place. Every building performs work, if it is only to keep off the rain or to remain upright against the wind. At the same time, even the simplest structure produces a visual impression upon those who use it or look at it: unconsciously or by design, it says something to the beholder and modifies, in some slight degree at least, even his bodily reactions. Functions permanently invisible, like those performed by the foundations or the heating apparatus, may remain outside the architectural picture; but every function that is visible contributes in some degree to expression. In simple monuments, like obelisks, or even in more complex structures like temples, the function of the building is subordinate to the human purpose it embodies: if such structures do not delight the eye and inform the mind, no technical audacity can save them from becoming meaningless. Indeed, ideological obsolescence is more fatal than technical obsolescence to a work of architecture. As soon as a building becomes meaningless, it disappears.

Modern architecture crystallized at the moment that people realized that the older modes of symbolism no longer spoke to modern man; and that, on the contrary, the new functions brought in by the machine had something special to say to him. Unfortunately, in the act

of realizing these new truths, mechanical function has tended to absorb expression, or in more fanatical minds, to do away with the need for it. As a result, the architectural imagination has, within the last twenty years, become impoverished: so much so that the recent prize-winning design for a great memorial, produced by one of the most accomplished and able of the younger architects, was simply a gigantic parabolic arch. If technics could not, by itself, tell the story of the pioneer, moving through the gateway of the continent, the story could not, in the architectural terms of our own day, be told. This failure to do justice to the symbolic and expressive functions of architecture perhaps reached its climax in the design of the United Nations Headquarters, where an office building has been treated as a monument, and where one of the three great structures has been placed so as to be lost to view by most of the approaches to the site.

By now, many architects have become aware of a self-imposed poverty: in absorbing the lessons of the machine and in learning to master new forms of construction, they have, they begin to see, neglected the valid claims of the human personality. In properly rejecting antiquated symbols, they have also rejected human needs, interests, sentiments, values, that must be given full play in every complete structure. This does not mean, as some critics have hastily asserted, that functionalism is doomed: it means rather that the time has come to integrate objective functions with subjective functions: to balance off mechanical facilities with biological needs, social commitments, and personal values. And to understand the new prospects that open before architecture, we must first do justice to functionalism and to see how it came about in our time that the mechanical part or the even more abstract spatial form was taken for the whole.

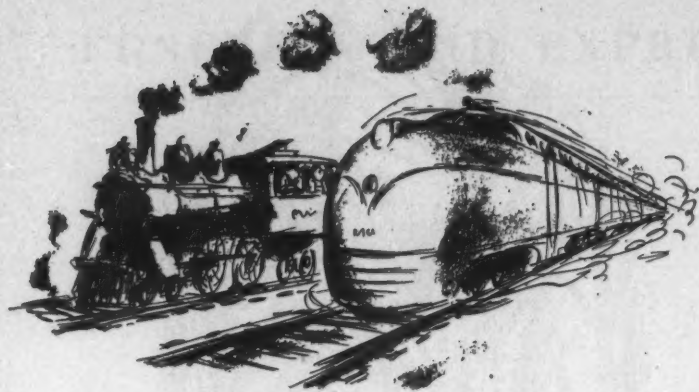
As so often happens, functionalism came into the world as a fact long before it was appraised as an idea. The fact was that for three centuries engineering had been making extraordinary advances in every department except architecture: a passion for economy, a methodical concentration upon productive work, a growing concern with practical needs, had given authority to mechanical methods, rational calculations, repetitive processes; and had opened up new resources and energies. Even before the machine began to exert its special discipline, functional needs had tended to produce strong geometric or organic forms in building: a barn, a haystack, or a silo, a castle, a bridge, a seaworthy sailing vessel — all these are functional forms whose cleanness of line and rightness of shape spring, like the shape of a sea-gull, from the work to be performed.

By and large, people do not consciously enjoy such structures until they have ceased to use them, or at least until they pause long enough to take in the mean-



"In the cathedrals of the Middle Ages, economy, comfort and good acoustic properties were all cheerfully sacrificed to the magnification of glory and mystery, in a fashion designed to overwhelm the worshipper"

ing of what they have done. But these structures have at least the quality of all organic creations: they identify themselves and express the functions they serve. When a steam locomotive is fully developed, for example, so that all its excrescences and technological leftovers are absorbed in the final shape — streamlined as we now say — that locomotive not merely is more speedy than the primitive form, but it unmistakably says speed, too. These fresh mechanical interests had a vital message for modern architects, for they reopened a vista of constructive possibilities that had been closed in the Renaissance by a deliberate sacrifice of function to expression, and of expression itself, once the baroque impulse died, to mere correctness and archaeological refinement. What Durham Cathedral says, by reason of its massive stone columns and free space, could not be said with bamboo poles and thatched roofs. By the varied means modern engineering had placed at the architects' disposal, the architects' imagination should have been effectively expanded, if human purposes in other departments of



*"... that locomotive not
merely is more speedy ... but
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*"... functional forms whose
cleanness of line spring, like
the shape of a sea-gull, from
the work to be performed"*



life had kept pace with modern man's technical aptitudes.

One of the first people to understand the implications of functionalism as a criterion of good form was the American sculptor, Horatio Greenough. In the middle of the nineteenth century, at the end of his all-too-brief life, he published a series of papers that for the first time formulated the new esthetic of the machine and widened its applications to all forms of beauty. Greenough, a student of current biology as well as of sculpture, carried further the great theorem of Lamarck: Form follows function. He saw that this generalization applies to all organic forms, even man-created ones.

Greenough recognized that the effective works of

art in his own day, the primitives of a new era, were not the derivative symbols of eclectic painting and architecture, but the strong virile forms, without any historic attachment than to their own age, of the new tools and machines and engineering structures that met the needs of modern life. The American ax, the American clock, the clipper ship—in every line of these utilities and machines necessity or function played a determining part. They were without ornament or decorative device of any kind, except perhaps for a surviving ship's figure-head: like the naked body, when harmoniously developed, they needed no further ornament or costume to achieve beauty. For what was beauty? "The promise of function."

As formulated by Greenough, that was a breathtaking, a spine-tingling thought; and in the minds of Greenough's successors, such as Louis Sullivan, who may have breathed in Greenough's ideas with his native New England air, this doctrine provided a genuine starting point for the new architecture. No building could hope to do justice to the values of our age that did not, by design, follow the lines dictated by effective function: the beautiful, as Emerson put it, must rest on the foundations of the necessary.

But while Greenough's doctrine was a salutary one, it was incomplete; for it failed to do justice to those specifically human values that are derived, not from the object and the work, but from the subject and the equality of life the architect seeks to enhance. Even mechanical function itself rests on human values: the desire for order, for security, for power; but to presume that these values are, in every instance, all-prevailing ones, which do away with the need for any other qualities, is to limit the nature of man himself to just those functions that serve the machine. One may therefore profitably contrast Greenough's doctrine with that advanced by his contemporary, John Ruskin, in *The Seven Lamps of Architecture*.

Contrary to popular misinterpretation, Ruskin had a very healthy respect for the utilitarian triumphs of the Victorian age: he said that a British ship-of-the-line, that early triumph of standardization and pre-fabrication, was one of the chief reasons for admiring his period. But Ruskin insisted that building was one thing and architecture was another: on his theory, a building became a work of architecture only when the bare structure was embellished with original works of sculpture and painting. In the form that Ruskin put it, this theory, which made architecture dependent upon the non-architectural arts, was glaringly false. Followed to its end, it would lead to the conclusion Geoffrey Scott reached in *The Architecture of Humanism*: a doctrine that would readily mask the organic anatomy of a building beneath a contradictory costume, designed by a painter, a decorator, or an "industrial designer."

But Ruskin's notion, that architecture is more than mere building, was in fact sound: it becomes acceptable as soon as one re-states it, so as to derive the specifically architectural element, not from painting and sculpture, but from the architect's treatment of the whole building as an image and a plastic form, in order to express, by his modification of pure functional needs, the meanings and values that are integrally related to the structure: underlining the relevant human purposes and values, designing an office-building so that it will make the workers in it feel more efficient and business-like, a university so that the students will be prompted to habits of study and intellectual intercourse, a church so that its communicants will feel more indrawn and exalted. To apply to all the diverse activities and needs of a community, the standards that are appropriate to a factory is clearly a case of irrelevant symbolism. Those qualities that differentiate architecture from building cannot be derived from the mechanical requirements of the structure: they spring from the character and purpose of the user, as these are interpreted and remolded by the architect.

There are doubtless moments when the architect needs the painter and the sculptor, just as he may have need for other handicrafts. But when an architect uses all the resources of his art, the building itself becomes a multi-dimensional image, a whole series of pictures that change in quality with every hour of the day, and with every change in position by the observer. So, too, it becomes a highly complex plastic form, whose interior space and openings are as significant as the mass, since in a building the possibility of movement through space provides the architect with resources that are not at the disposal of the sculptor. By his choice of materials and textures and colors, by the contrasting play of light and shade, by the advance and recession of planes, by the clarification and organization of the plan in relation to the elevation, the architect produces a highly complex symbol of human purposes and values, emotions, feelings, and sentiments.

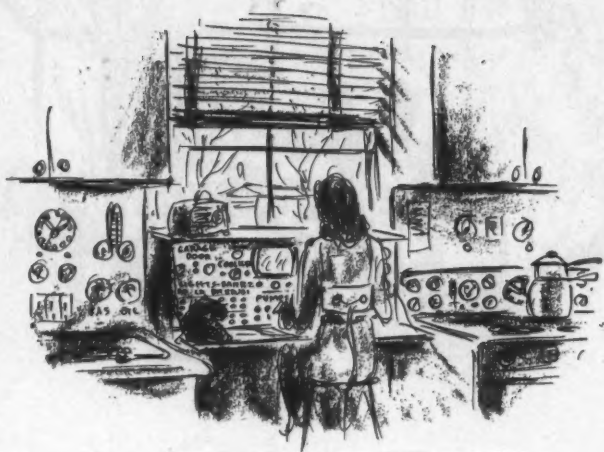
Our age properly renounced the use of antiquated symbols in its architecture; and at that moment, many architects thought it was possible to renounce every manner of symbolism as well. But the actual effect of the contemporary effort to strip architecture down to building was to make the machine — the dynamic instrument of this change — itself an object of veneration. Feelings and emotions that had hitherto attached themselves to organisms and persons, to political institutions or religious ideals, were now canalized into the machine. Like the hero of an almost forgotten play by Eugene O'Neill, the modern architect made a god of the Dynamo, as if the sole meaning of life for modern man lay in his control of matter and energy, or in his further transposition of austere machine-forms into depersonal-



"It was the desire to embrace nature that led to the introduction of the garden into the interior"

ized abstractions, such as the Cubists and the later abstractionists gave form to in their paintings. As a result, symbolism, driven out the front door by the doctrine that form follows function, came in at the rear. Much of what was masked as strict functionalism or as austere rationalism during the last generation in architecture was in fact a sort of fetichism: an overvaluation of the machine — or of the abstract shadow the machine cast on the mind — as an object of love.

Now as a symbol, the machine might properly have represented the crude industrial culture of the mid-nineteenth century: an age overconfident of the benefits of mechanical progress, brutally negligent of the many inhumanities that accompanied this process. Indeed, even at its starkest and barest, the machine represented



"To presume that the desire for order, for security, for power do away with the need for any other qualities is to limit the nature of man"

something higher than the debased humanism of Victorian ornament, with its sordid, ill-proportioned, mechanical forms, its beery sentimentality. But we today know in 1951, as people could not know in 1851, that the machine, even in its highest developments, represents only a fragment of the human spirit: the very power that it has placed at man's disposal may, so far from ushering in an era of peace and plenty, reduce mankind to the utter barbarism of a war of radioactive extermination. Fortunately, ours is not just the age of Faraday, Clerk-Maxwell, and Einstein, of Watt, Bessemer, and Taylor: it is also the age of Darwin and Bergson and Haldane, of Freud and Geddes and Toynbee,

of Kropotkin and Howard and Schweitzer. In short, ours is an age of deep psychological exploration and heightened social responsibility. Thanks to advances in biology, sociology, and psychology, we begin to understand the whole man; and it is high time for the architects to demonstrate that understanding in other terms than economy, efficiency, and abstract mechanical form.

In the multi-dimensional world of modern man, subjective interests and values, emotions and feelings, play as large a part as the objective environment: the nurture of life becomes more important than the multiplication of power and standardized goods, considered as ends in themselves. The Machine can no more adequately symbolize our culture than can a Greek Temple or a Renaissance Palace. On the contrary, we know that our almost compulsive preoccupation with the rigid order of the machine is itself a symptom of weakness: of emotional insecurity, of repressed feelings, or of a general withdrawal from the demands of life. To persist in the religious cult of the machine, at this late day and date, is to betray an inability to interpret the challenges and dangers of our age. In this sense, Le Corbusier's polemical writings, beginning with his publication of *Towards a New Architecture*, were in no small measure reactionary influence: retrospective rather than prophetic.

Now all this is not to say that the doctrine that form follows function was a misleading one. What was false and meretricious were the narrow applications that were made of this formula. Actually, functionalism is subject to two main modifications. The first is that we must not take function solely in a mechanical sense, as applying only to the physical functions of the building. Certainly new technical facilities and mechanical functions required new forms; but so, likewise, did new social purposes and new psychological insights. There are many elements in a building, besides its physical elements, that affect the health, comfort, and pleasure of the user. When the whole personality is taken into account, expression or symbolism becomes one of the dominant concerns of architecture; and the more complex the functions to be served, the more varied and subtle will the form be. In other words — and this is the second modification — expression itself is one of the primary functions of architecture.

On hygienic grounds, for example, the architect may calculate the number of cubic feet of space necessary to provide air for a thousand people in a public hall; and with the aid of the exact science of acoustics — plus a little luck — he may design a hall which will enable every person to hear with a maximum of clarity every sound that is made for the benefit of the audience. But after the architect has made all these calculations, he has still to weigh them with other considerations that have to do with the effect of space and form on the human soul. In the cathedrals of the Middle Ages economy,

comfort, and good acoustic properties were all cheerfully sacrificed to the magnification of glory and mystery, in a fashion designed to overwhelm the worshipper. In terms of medieval culture, that was both effective symbolism and true functionalism. In the strictly graded aristocratic society of the Renaissance, in which music itself was subservient to the ostentatious parade of upper class families, seeking to impress each other and the populace, the Palladian horseshoe form of opera house, with poor acoustic properties but excellent visibility for the boxholders, likewise did justice to the functions of the building in the order of their social importance, within that culture.

In other words, every building is conditioned by culture and personal aims as well as by physical and mechanical needs. An organic functionalism, accordingly, cannot stop short with a mechanical or a physiological solution. So in the re-building of the House of Commons, Mr. Winston Churchill wisely insisted that the seating space should be considerably smaller than the actual membership, in order to preserve the closeness and intimacy of debate in the House, under normal conditions of attendance. That decision was as wise as the medieval decoration that went with it was inept and meretricious; though an original modern architect might have found a means of echoing, in works of original sculpture, the traditional ceremonies and symbols so assiduously preserved in the British Parliament, beginning with that medieval relic, the Speaker's mace.

The architecture of Frank Lloyd Wright was subjected to a considerable amount of arbitrary critical disparagement during the twenties when mechanization and Cubist depersonalization were regarded, with Le Corbusier, as the all-sufficient ingredients of contemporary form. But this disparagement was based on the very qualities that made Wright's architecture superior to the work of Le Corbusier's school. In Wright's work, the subjective and symbolic elements were as important as the mechanical requirements. From his earliest prairie houses onward, both the plan and the elevations of Wright's buildings were informed by human ideals, and by a sense of what is due to the person whose varied needs and interests must be reflected in the building. It was the idea of the organic itself, the desire to embrace nature, that led to the introduction of the garden into the interior; it was the idea of horizontality as an expression of the prairie that led Wright to emphasize horizontal lines in his early regional houses. So, too, in Wright's later work, a geometrical figure, a circle or a hexagon or a spiral, the expression of a subjective human preference, supplies the ground pattern for the whole building. In such instances, as the late Matthew Nowicki pointed out, the old formula is reversed — function follows form.

Now, when subjective expression is overplayed the



"Every building is conditioned by culture and personal aims as well as by physical and mechanical needs"

"Now, when subjective expression is overplayed the results are not always happy"



results are not always happy — any more than was the case in Renaissance buildings, where the ideal of axial balance and symmetry determined both plan and elevation. But to say this is only to admit that, if mechanical functions, taken alone, do not fulfill all human needs, so subjective expressions, if divorced from practical considerations, may become wilful, capricious, defiant of common sense. Accordingly, the more sensitive the architect is to expression, the more capable he is of transforming "building" into "architecture," the greater the need for his own self-knowledge, self-control, self-discipline: above all, for subordinating his own inner wilfulness to the character and purposes of his client.



*"Like the naked body,
when harmoniously de-
veloped, they needed no
further ornament or cos-
tume to achieve beauty"*

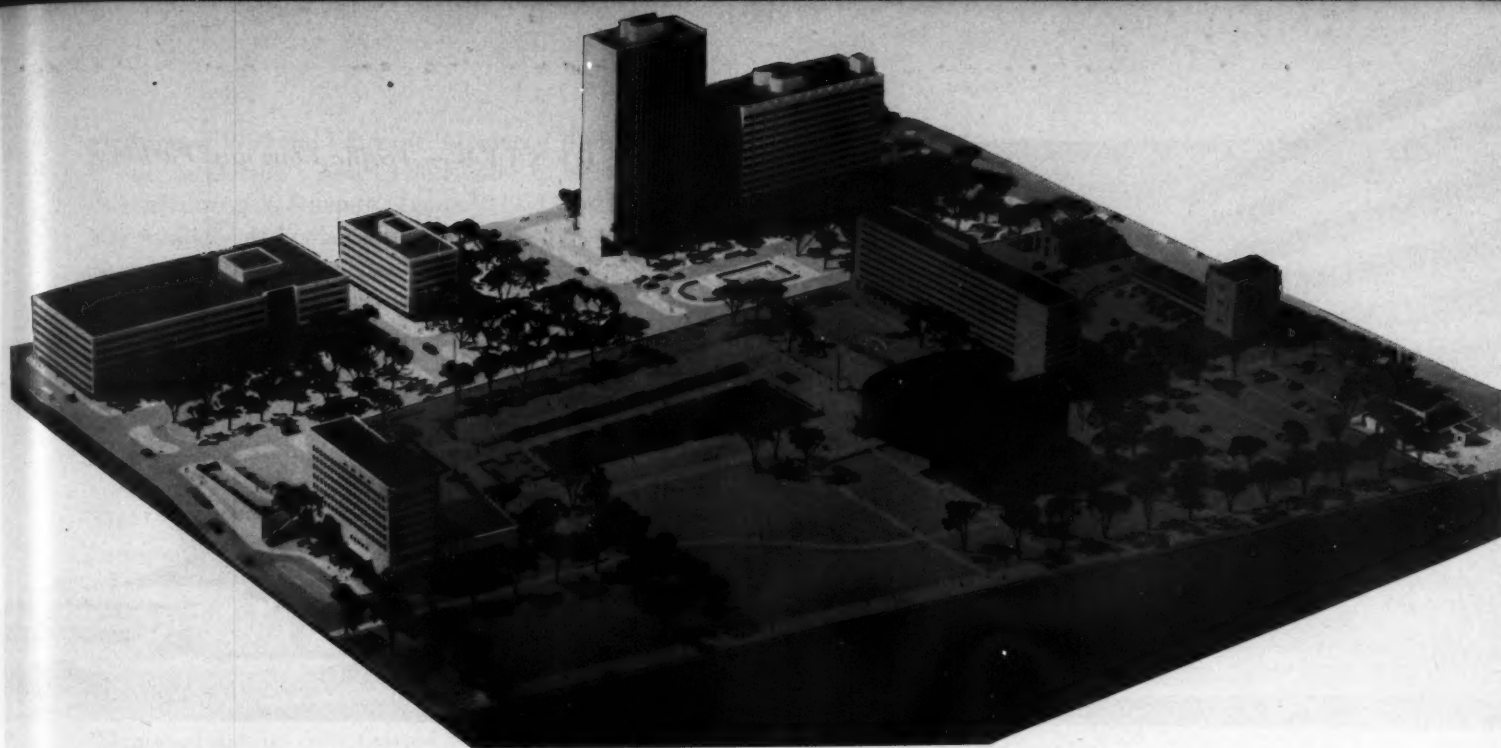
On this latter score, Frank Lloyd Wright's work is sometimes not impeccable; for all too rarely has he been faced with a client sufficiently strong in his own right to stand up to Wright's overbearing genius, in a way that will do justice to every dimension of the problem. The architect who perhaps came closest among our contemporaries, to resolving function and expression, was the late Matthew Nowicki, he whose early death in an airplane accident in 1950 was a loss comparable to that architecture sustained when John Wellborn Root died at an equally early age. In the course of some forty intense years of life, Nowicki had passed through the various phases of modern architecture represented by

Cubism, by mechanical functionalism and *Sachlichkeit*, by Le Corbusier's "International Style." Firmly rooted in our own age, he regarded the standard unit, the module, as an essential discipline for the modern architect: the minimum ingredient for form. In such designs as that for the great amphitheater in the State Fair Grounds at Raleigh, North Carolina, now under construction, he used that typical modern form, the parabolic arch, to enclose the suspended facing ranks of the grandstand: an acrobatic feat of great audacity and beauty, appropriate to the functions it served.

But Nowicki knew that all buildings speak a language, and that this language must be understood by the people who use it. When he worked on the preliminary designs for the library and the museum that were to be erected near the State House in Raleigh, he took into account the love and affection the people of North Carolina feel toward that sober piece of provincial classicism. For the sake of meeting their sentiment half way, he was ready to utilize artificial lighting throughout the new buildings in order to create a solid masonry structure which, in its own modern way, would carry on the theme of the beloved older building. That tact, that understanding, that human sympathy stands in full contrast to Le Corbusier's constant demand for people cut to the measure of his own architecture: like old Procrustes, he would amputate the human leg or stretch the human soul to fit the form he has arbitrarily provided for it.

So, again, when Matthew Nowicki went to India to work on the design of a new capitol for the East Punjab (with Mayer and Whittlesey), he brought with him no ready-made stereotypes from the West, but absorbed, with his marvelous sensitivity and intuitive grasp, the Hindu way of life, sympathetic even to the fathomless richness and complexity that expressed itself traditionally in ornament. In the intimate plans for housing and neighborhood units, above all in one of the sketches for the Capitol itself, Nowicki translated this richness into patterns and plans that were wholly in the vernacular of modern building, yet were native to the scene and in resonance with the Hindu personality and with Hindu family life.

Rigorous in its mechanical and spatial foundations, his architecture rose above them to the plane of the social and the personal. Through his human sympathy, through his reverence for all genuine expressions of life, he was equipped as no other architect of his generation perhaps was to effect a fuller reconciliation of the organic and the mechanical, the regional and the universal, the abstract-rational and the personal. Along the path that he began to blaze, modern architecture, if it is to develop and grow, must follow, creating forms that will unite every aspect of the human organism, body and spirit.



THE HENRY & EDSSEL FORD AUDITORIUM

CIVIC CENTER, DETROIT, MICHIGAN

Crane Kiehler & Kellogg

O'Dell, Hewlett & Luckenbach

Architects

Mayor

Albert E. Cobo

Memorial Hall Commission

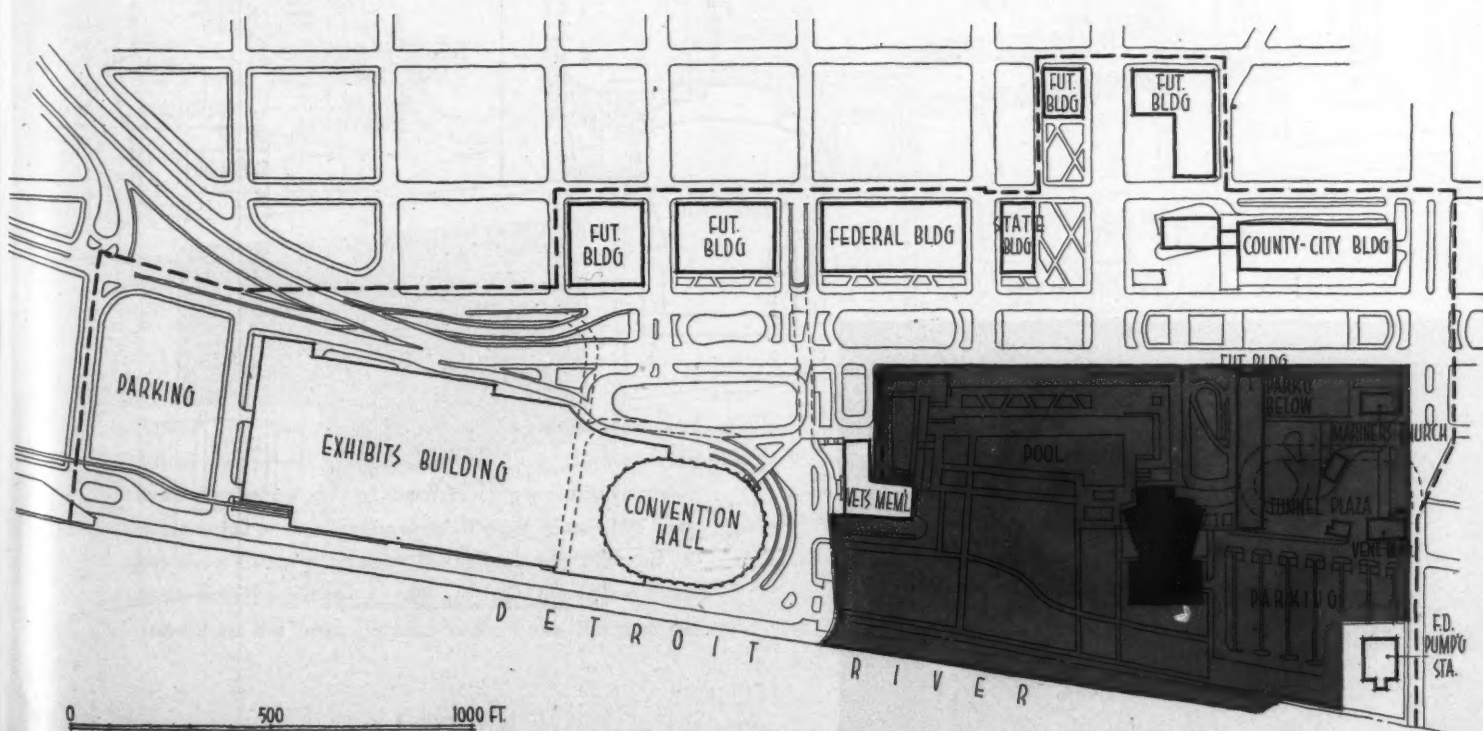
J. E. Frawley, President

Frank G. Schemanske, Vice-President

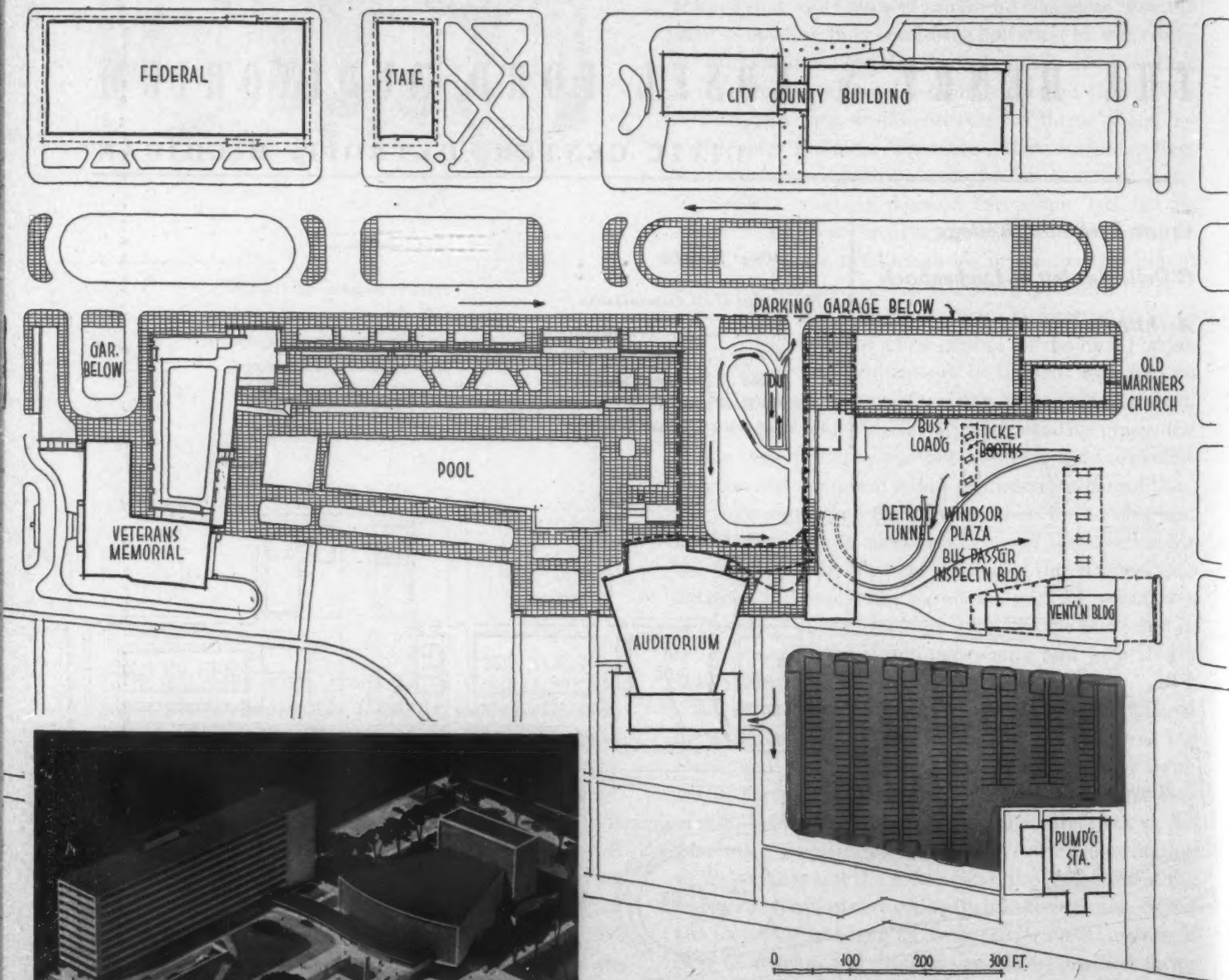
Weld S. Maybee, Secretary

W. B. Waldrip

John W. Libcke, Director



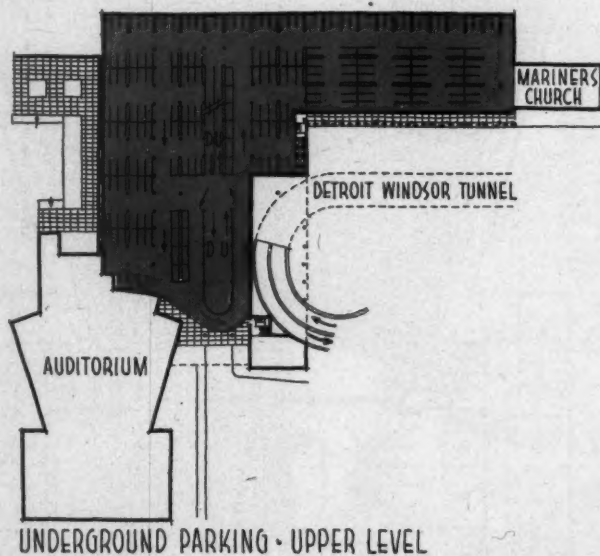
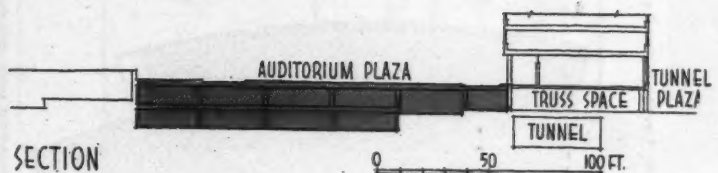
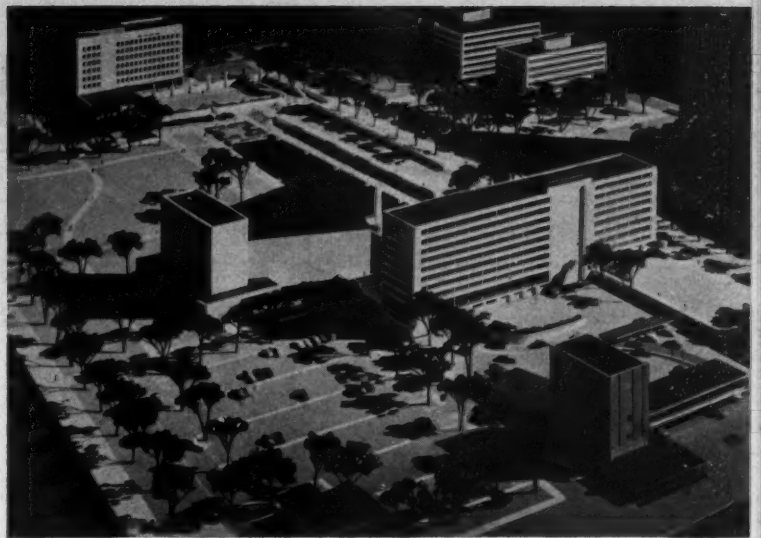
DETROIT CIVIC CENTER — Traffic Flow and Parking



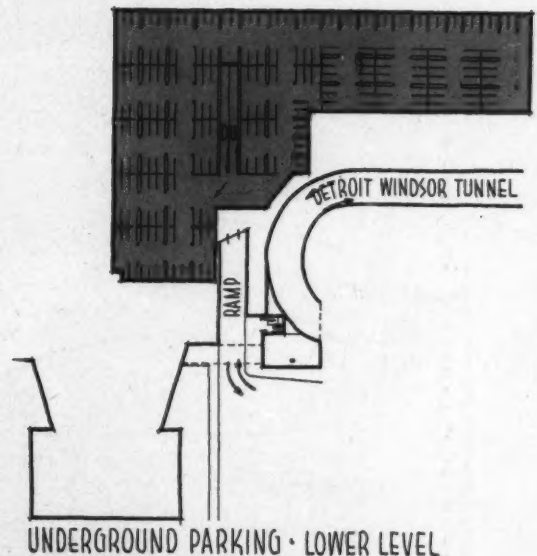
IN June of 1950 the Veterans' Memorial Building, first unit in Detroit's new Civic Center to be completed (ARCHITECTURAL RECORD, January 1951, pp. 100-107), was formally dedicated and opened to the public. The ceremonies marked the end of more than half a century of planning for the ambitious river-side development.

The Henry and Edsel Ford Memorial Auditorium, second part of the project to get under way, is closely integrated with the impressive Civic Plaza which it faces. Its architects very wisely were made responsible for the development of the Plaza as well, and tied the two together not only harmoniously but very efficiently. The Plaza plan originally was worked out by Saarinen, Saarinen and Associates, but had to be changed somewhat following a thorough study of underground facilities such as sewers.

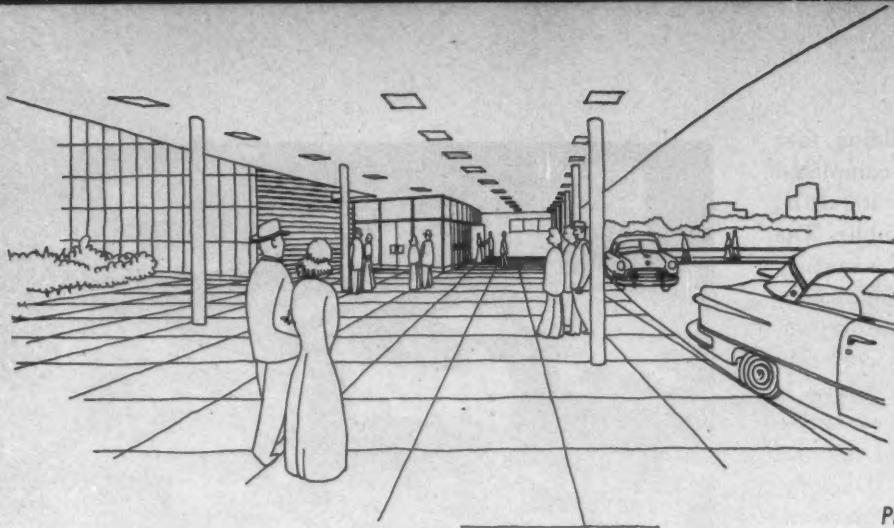
Since Detroit is a city of automobiles, provisions for parking had to be as generous as possible, and the flow of traffic had to be carefully controlled. The Veterans' Memorial has its own limited parking facilities, which already are heavily taxed since the building is in constant use day and night. Convention Hall, directly to the west of the Veterans' Memorial, and one of the few buildings not fronting on the Plaza, also will have its own parking areas. To meet the needs of the rest of the Center — and to take care of the overflow from surrounding buildings as well — a two-level underground garage and a large open parking area to the right rear of the Auditorium are to be provided.



Traffic flow and ramp system are ingeniously worked out as arrows above and opposite show. Cars arriving from the Detroit side of the river may go directly down to garage, or to parking area at right rear. Cars coming from Ontario through the tunnel may proceed directly into the garage or may go from the Tunnel Plaza around to the open parking area. From the garage,

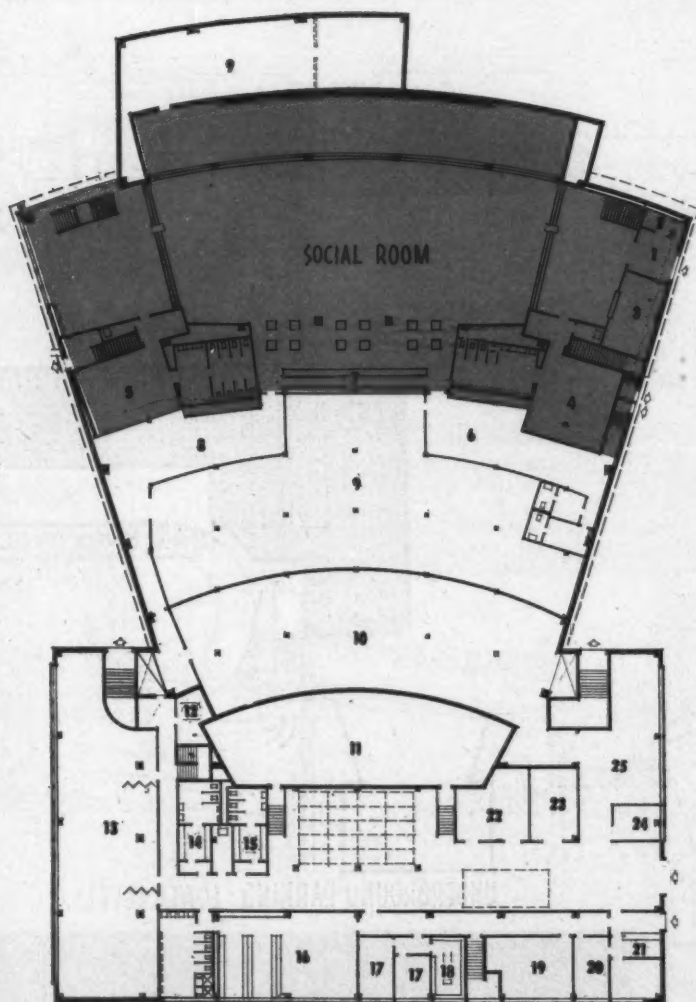


car passengers will go up to the Plaza either by elevator or by stairs, both leading into the building at the eastern end of the Plaza, connected by covered passage with the Auditorium. The exact nature of this easternmost building has not as yet been determined but a structure of the general shape indicated on the plan is considered essential to terminate the mall



Plaza entrance to Auditorium

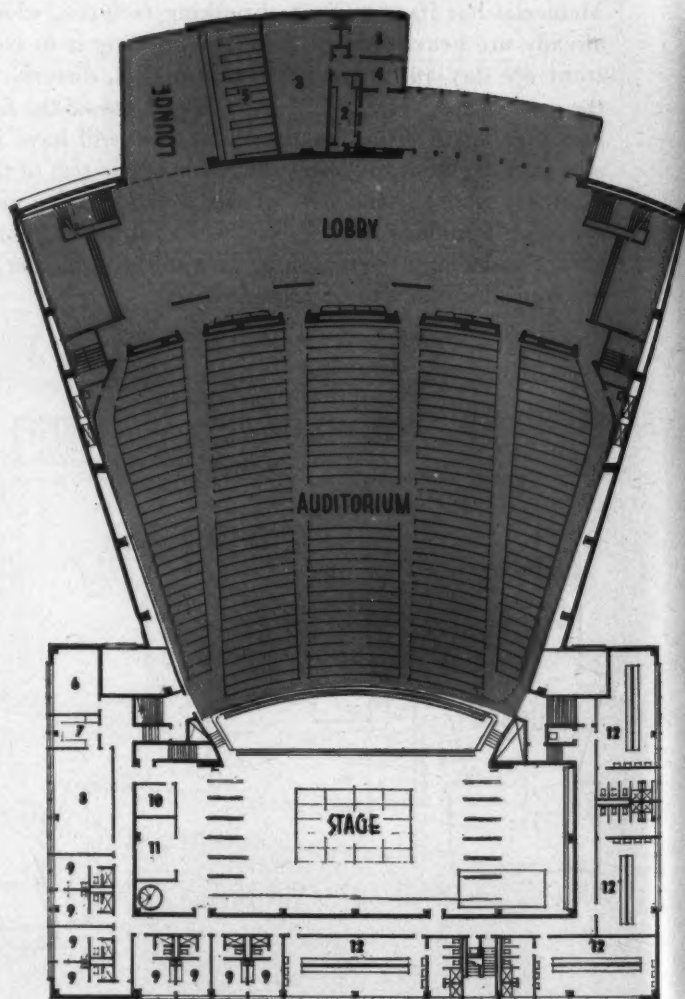
DETROIT CIVIC CENTER — Auditorium



GROUND FLOOR PLAN

1. Entrance
2. Ticket Office
3. Check Room
4. Men's Lounge
5. Women's Lounge
6. Service Kitchen
7. Refreshments
8. Chair Storage
9. Storage

10. Mechanical Room
11. Orchestra Pit
12. Engineer's Office
13. Rehearsal Rooms
14. Male Help
15. Female Help
16. Musicians' Room
17. Office
18. Music Library
19. Unassigned



MAIN FLOOR PLAN

20. Instrument Room
21. Stage Office
22. Property Storage
23. Electricians' Room
24. Receiving Room
25. Carpentry Shop

MAIN FLOOR

1. Vestibule
2. Ticket Office

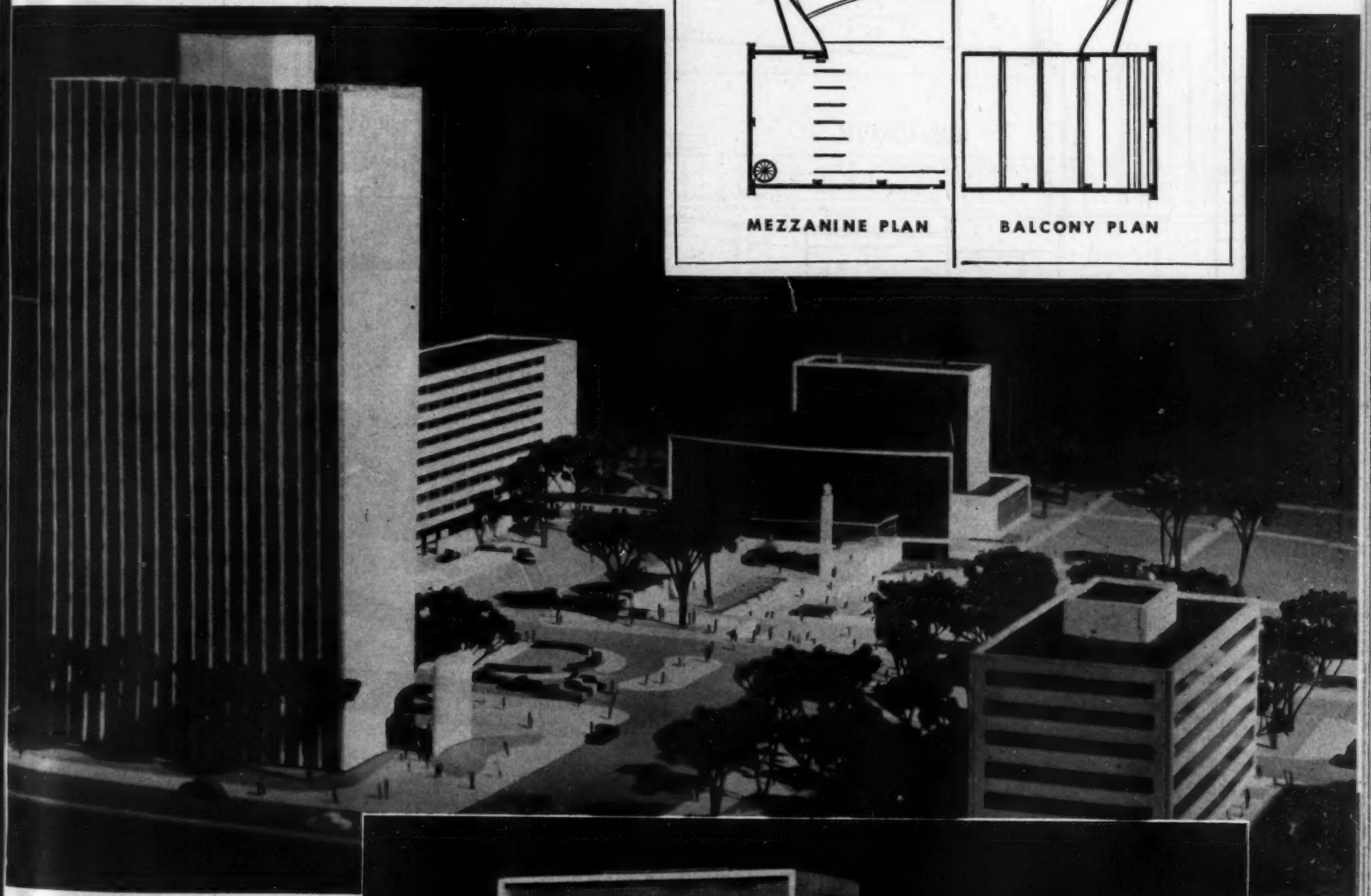
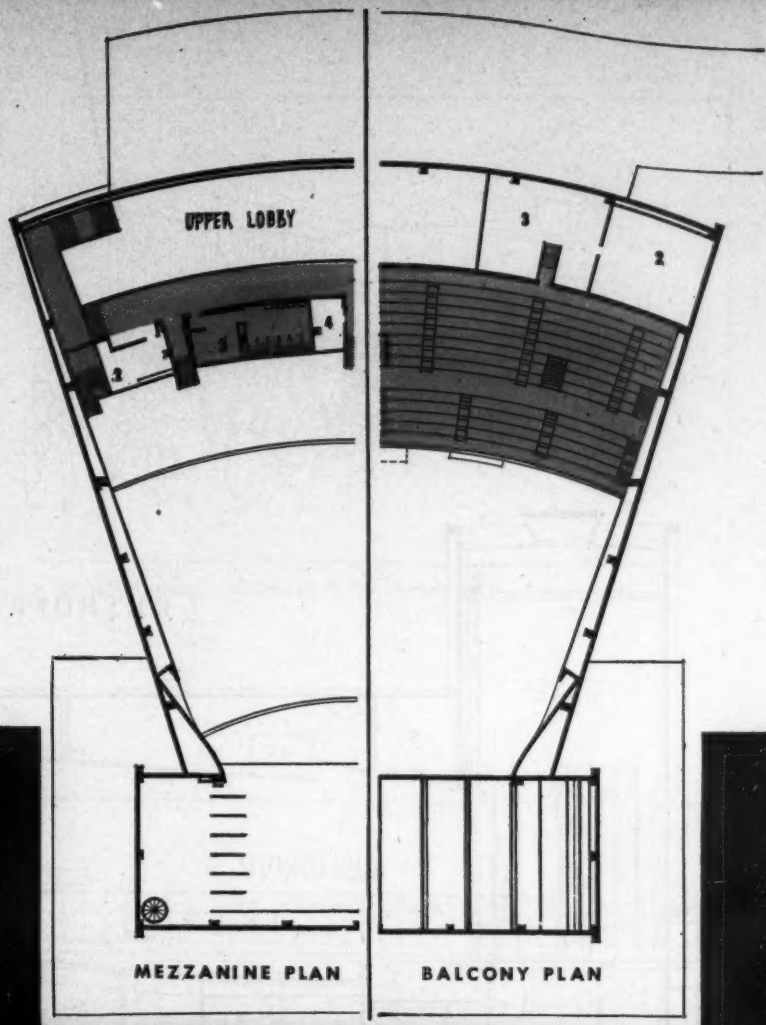
3. Manager's Office
4. Manager's Reception Room
5. Check Room
6. Reception Room
7. Kitchenette
8. Green Room
9. Private Dressing Rooms
10. Quick Change Room
11. Property Room
12. Chorus Rooms

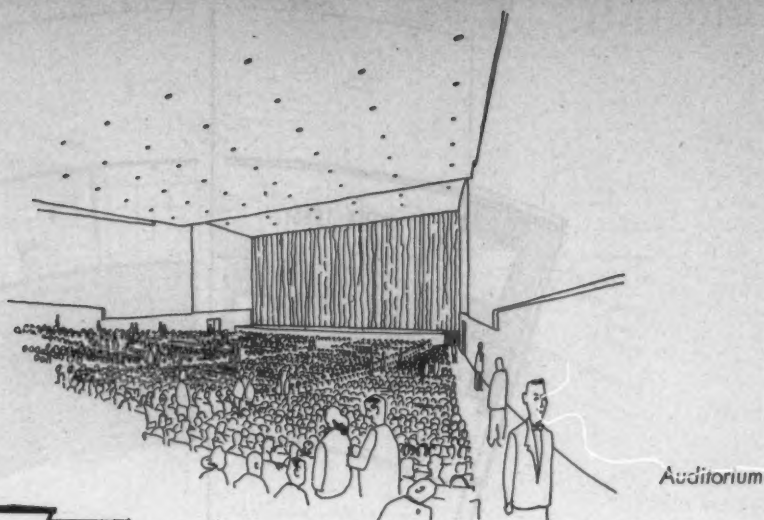
MEZZANINE

1. Mezzanine
2. Women Ushers
3. Women's Lounge
4. Storage
5. Men's Lounge
6. Men Ushers

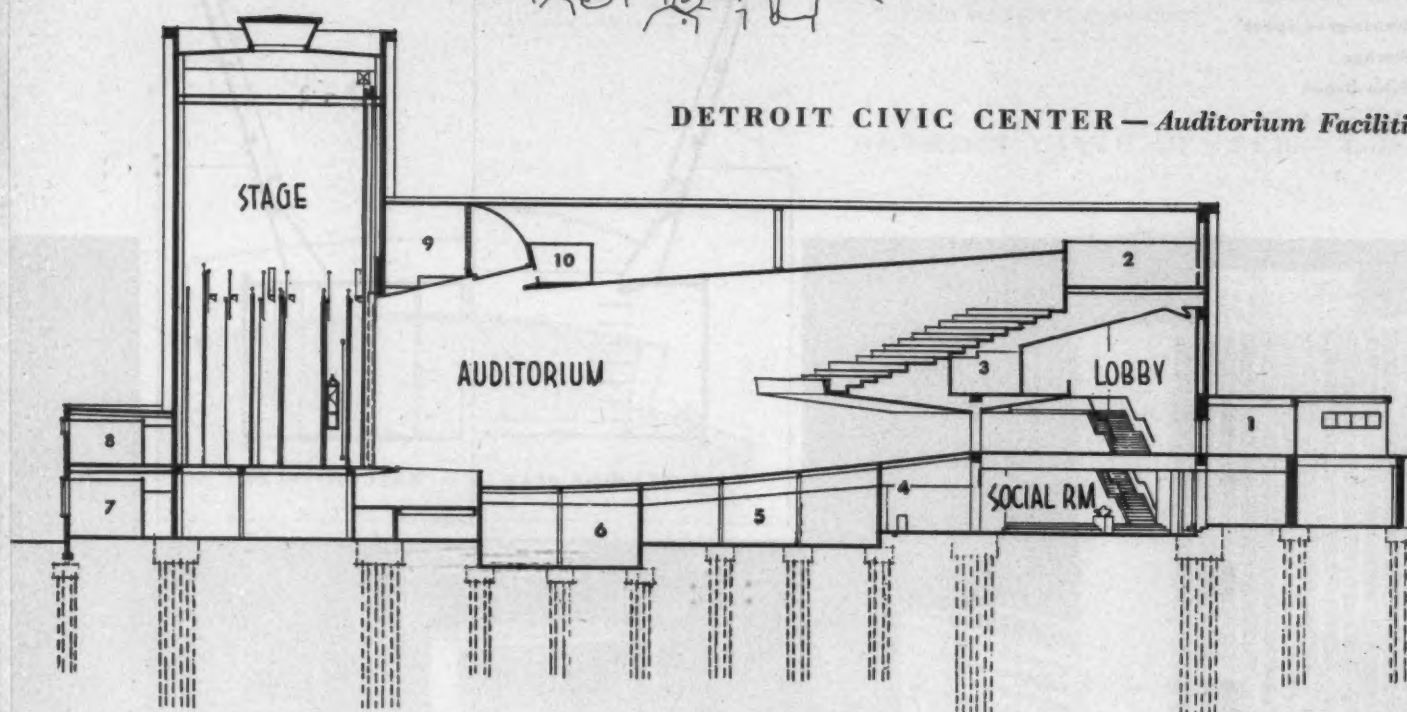
BALCONY

1. Projection Room
2. Unassigned Space
3. Storage
4. Echo Organ
5. Generator Room



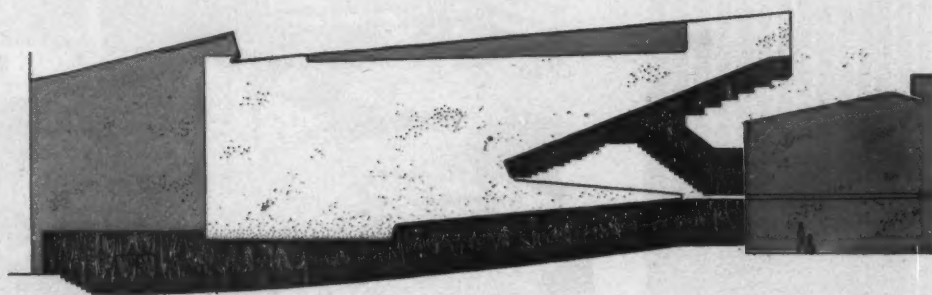


DETROIT CIVIC CENTER — Auditorium Facilities



LONGITUDINAL SECTION

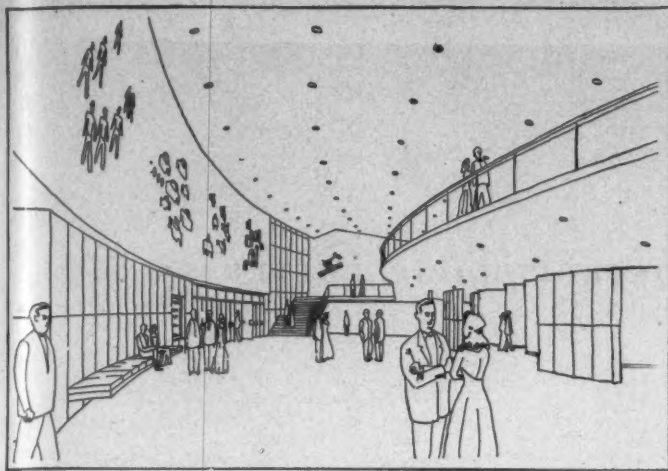
1. Vestibule
2. Projection Room
3. Toilets
4. Refreshments
5. Storage
6. Machine Room
7. Office
8. Chorus Room
9. Organ Chamber
10. Spotlight Room



Since this is a civic auditorium it had to be planned to accommodate both large spectacles such as operas and small intimate performances such as recitals and lectures. Its seating capacity was fixed at 2900 (1850 on the main floor, 1050 in the balcony), but the sightlines and acoustics have been worked out so that conditions will be excellent regardless of the size of the audience.

The entire stage house is unusually well organized

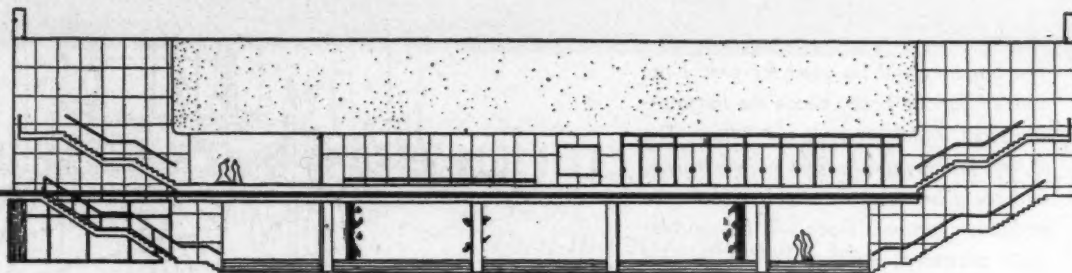
(plans, page 116). Performers' dressing rooms are located on the main floor surrounding the stage; the corridor connecting them can be used for chorus line-ups. Scenery and props can be taken directly from the truck entrance on ground floor to scene shops, or by a lift to the stage level. Storage, shops and rehearsal rooms are on the ground floor, the green room and kitchen on the main.



Lobby, mural at left, balcony at right



Lobby, balcony and doors to auditorium



Lobby will have marble floor, blue granite and decorated plastered walls, acoustical ceilings. Over entrance doors (top left) will be a commemorative sculptured panel in polished aluminum dedicated to Henry and Edsel Ford. Stairs at each end of lobby lead up to balcony and down to social room (next page)

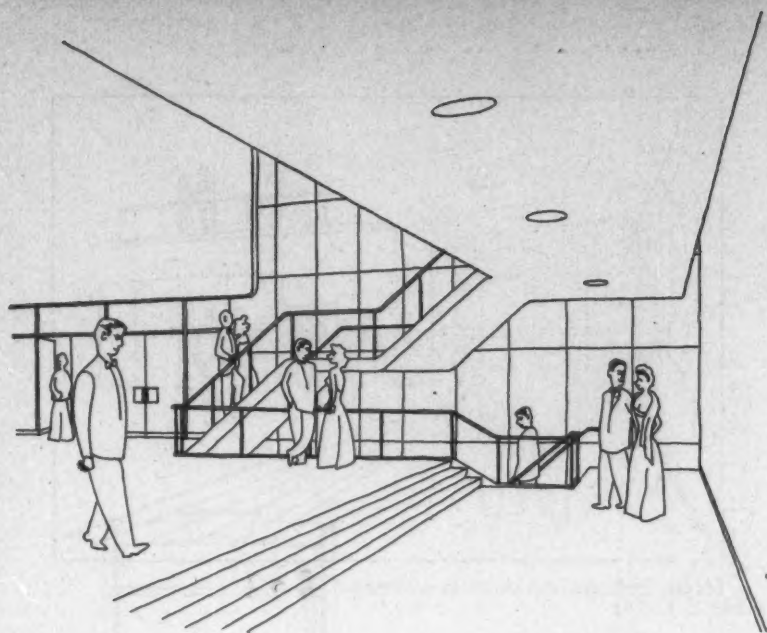


Lounge and checkroom

The stage will be provided with traps and disappearing footlights. The orchestra pit will have a movable floor which can be raised to the stage level.

Foundations of the building will be of reinforced concrete on piles driven to rock or firm soil; framework will be of structural steel encased in concrete. The auditorium will have a terrazzo floor with carpeted aisles, plaster and wood walls with acoustical treatment, and

plastered ceilings. The stage and auditorium lighting system will consist of a preselective electronic tube type of control, with sidewall coves and ceiling cut in the auditorium. The building will have organ chambers for the future installation of organ (note position of organ loft on plan), a complete projection booth, a complete spotlighting system, and provision for television and telecasting.



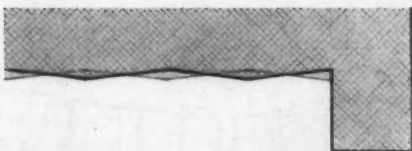
DETROIT CIVIC CENTER — Auditorium

The building will be used for civic functions of various kinds, hence the large social room (right) on the ground floor. The room is just downstairs from main entrance, and could be used separately without the auditorium proper. Floor will be marble, walls plastered; lighting will be indirect

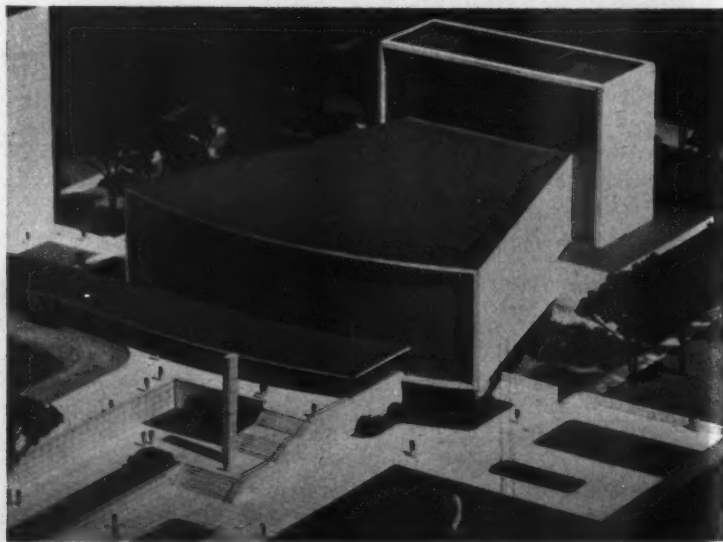
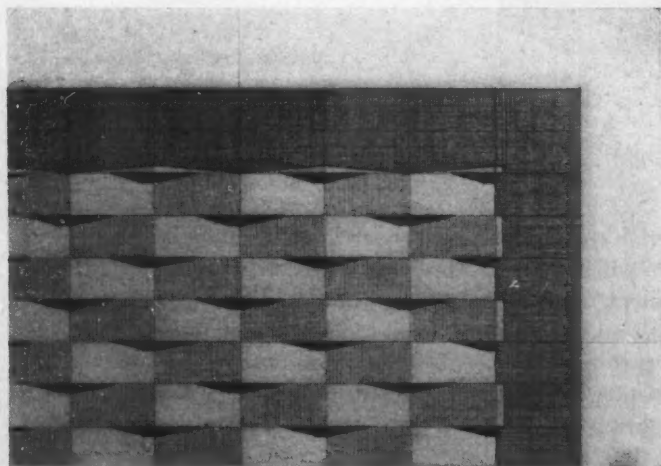


Wall Treatment

Right, part plan



Below, part elevation



Circular front wall and upper part of long walls of stage enclosure will be mica-flecked blue granite panels, faceted as shown in drawings at left to take advantage of the nature of the material and enhance its brilliance. White marble will be used on upper side walls to blend with the Veterans Memorial and other buildings



PLANT DESIGNED FOR EMPLOYEES' WELFARE

Asten-Hill Manufacturing Co.

Philadelphia, Penn.

The Ballinger Co., Architects and Engineers

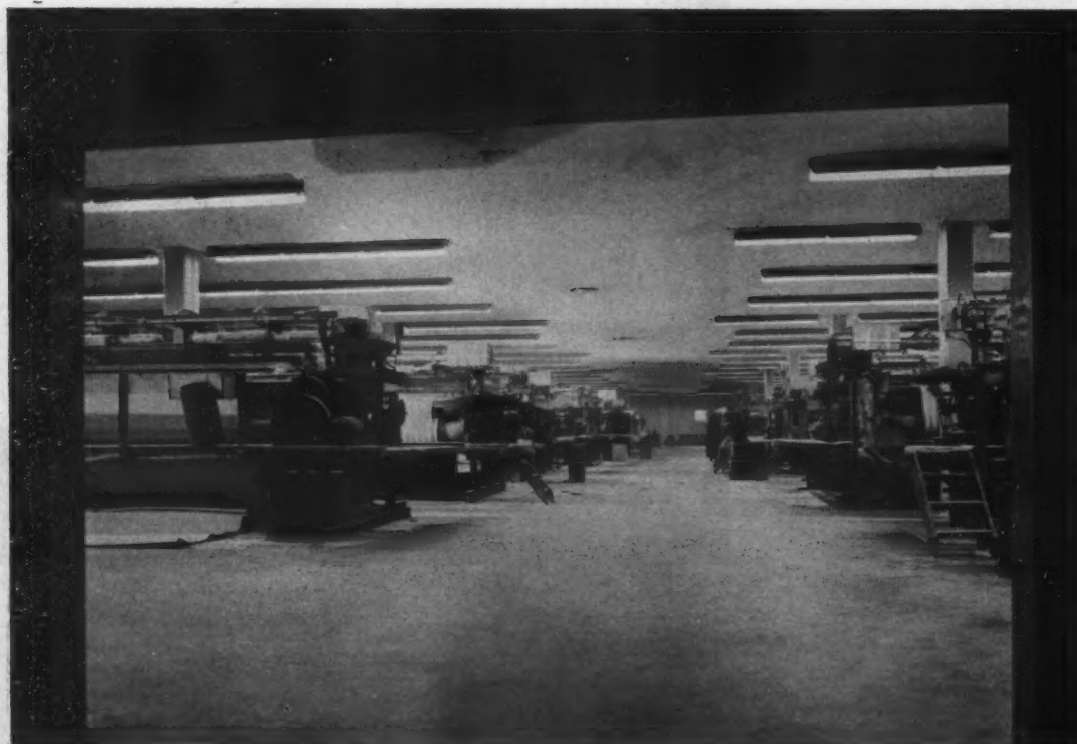
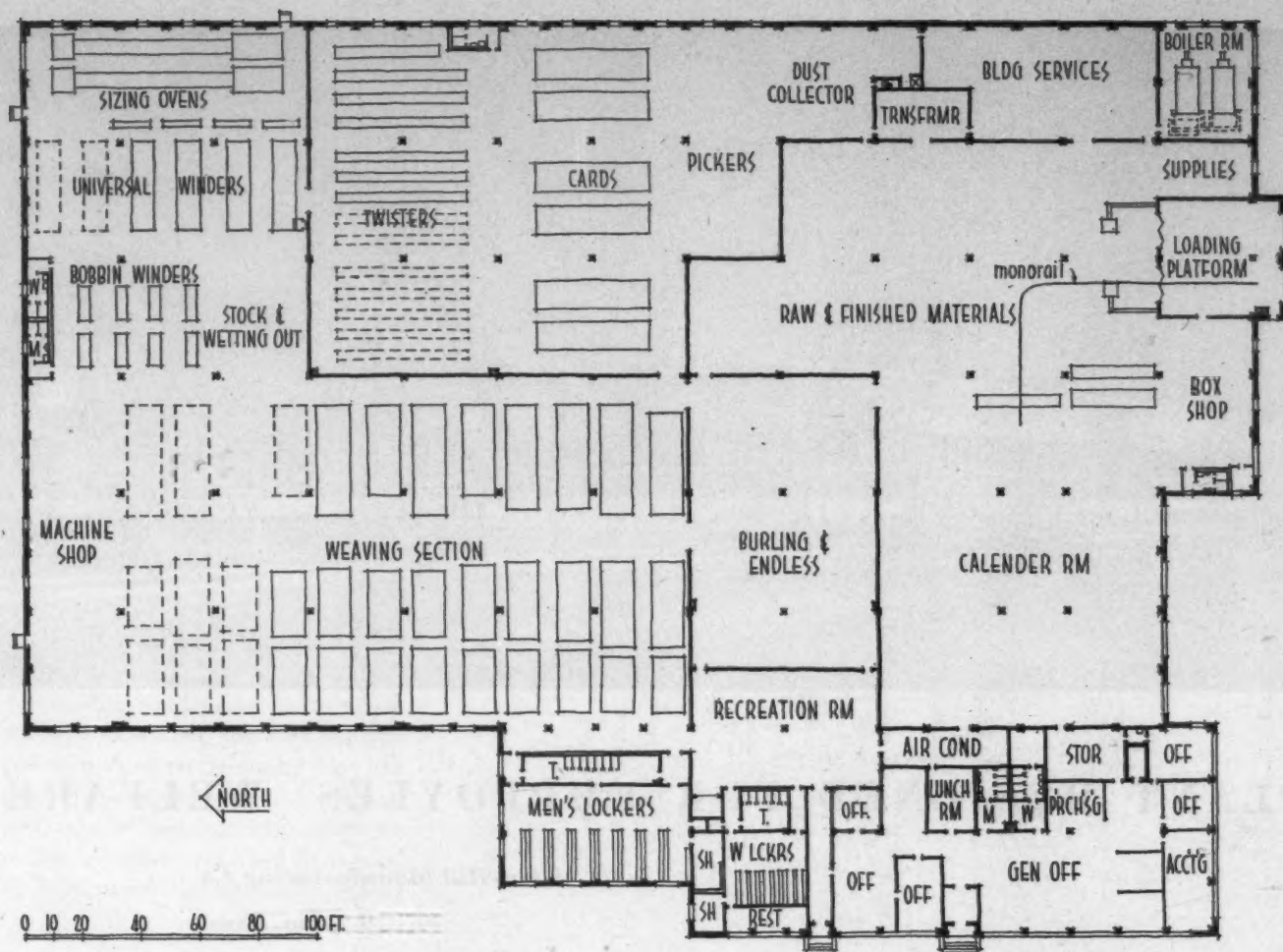
APART FROM THE USUAL CONSIDERATIONS for efficient processing layouts, the designers of this asbestos dryer felt plant were faced with a major problem of controlling asbestos dust. Uncontrolled, the dust accumulates on all projections and rough surfaces in process areas, and presents a silicosis-like health hazard to employees. Dependable control of temperature and humidity is also vital in manufacturing the felts. The goal of the owners was to construct a plant which would combine production efficiency and product control with pleasant and healthy working conditions.

The resulting design succeeds in providing good solutions to these problems within a neat, attractive structure. Especial attention was given to the employees' welfare, even to selection of a site near the workers' homes, although it was known that the deeply filled ground would require pilings. Other provisions include a parking area, pleasant locker, shower and toilet rooms, good lighting, and a general purpose room for lunch and recreation. Asbestos dust is removed from segregated process areas by a carefully planned system of hoods, ducts and fans, together with tunnels under the floor. The dust is then conveyed to electro-static filters and to a cyclone tower where it is salvaged for other use. A portion of the air is reconditioned for recirculation. Separate comfort air conditioning is provided in the office areas.

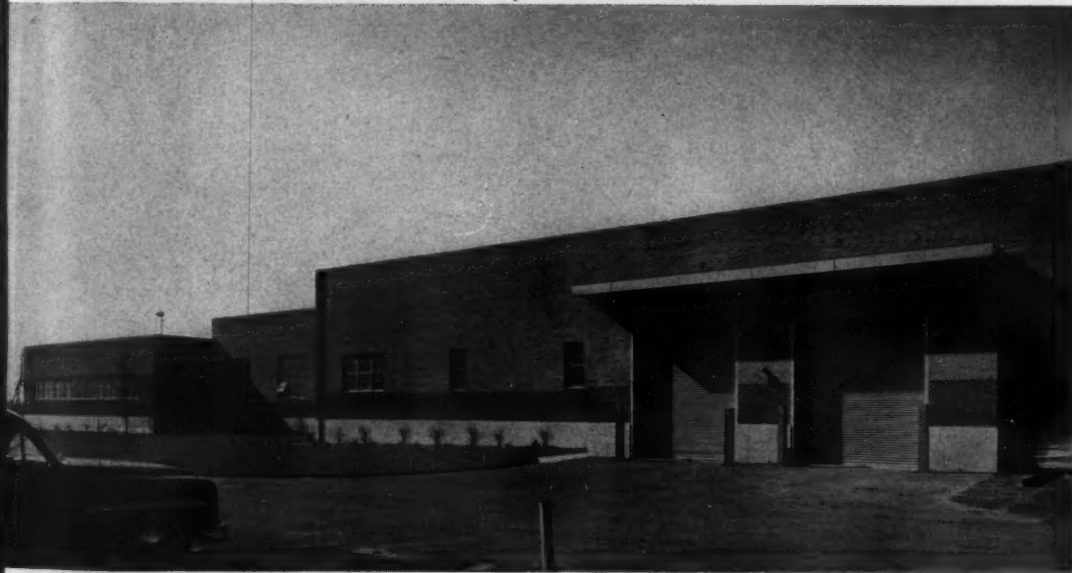


Joseph Mollitor Photos

The one story plant is surfaced with bands of light and dark brick, limestone trim, polychrome terracotta at main door. Flat roof employs special regulated drainage discharge system



Provision of clean, comfortable working areas has considerably improved employees' morale, with resultant increased efficiency. The well-lighted, air conditioned weaving section (left) is typical of these areas. The steel frame structure is designed around a continuous materials flow line, passing successively through the blending, carding, twisting, spooling, spinning, weaving and calendering departments. Expansion space for additional equipment (dotted lines on plan) is provided in each section. Glazed tile walls and hung plaster ceilings in these areas help minimize dust problem. Ceilings are left exposed in such other rooms as the raw and finished materials section (top right). Offices (bottom right) have plaster walls, acoustic ceilings, asphalt tile floors



SIX EAST AND WEST COAST HOUSES

A Presentation Prepared by John Hancock Callender, A.I.A.

WEST COAST — ATHERTON, CALIFORNIA

Residence of Mr. & Mrs. Kurt E. Appert

Joseph Allen Stein, Architect

Eckbo, Royston & Williams, Landscape Architects



Ernest Braun Photos



BEARING NO TRACES of "Bay Regionalism," this house nevertheless could hardly have been built anywhere else. The beneficent climate and a beautiful site were obviously basic conditions of the design.

To say merely that the location of the house on the site was determined by the existence of several splendid oaks, would be to miss the essential element in this design, which is the complete integration of building and site. In the illustration shown below it is apparent that house, tree, and terrace are esthetically and functionally integral parts of a single composition. The crisp lines of the house, its lightness and its geometrical precision, are beautifully contrasted with the magnificently rugged oak. Shade from the tree, in turn, softens

climate and the shaded site, these outdoor living areas are usable almost all of the time. The patio, protected on three sides by the house and on the fourth by a fence, can be used when the weather is too cool for outdoor comfort elsewhere.

The main entrance is from the motor court, through the patio (screened by planting from the private area) and into the loggia which gives access to all rooms. From the entrance there is a striking view through the living room to the terraces and gardens beyond. The loggia is nothing more than the conventional entry and bedroom corridor which have been skilfully combined and slightly expanded to form one of the principal features of the plan. In that portion of the loggia which



the severe lines of the house and makes the adjacent paved terrace one of the pleasantest "rooms" in the house.

The house proper — that is, the enclosed area — is not very large. Rooms are of modest size and the only small extravagance in the use of space is the pleasant entrance loggia. Yet this house provides a degree of luxurious living that is generally associated with much more elaborate establishments. The reason, of course, is that the usable space extends far beyond the walls of the house. Each room has its own terrace extension and the total paved outdoor area is actually greater than the floor area of the house. Because of the favorable

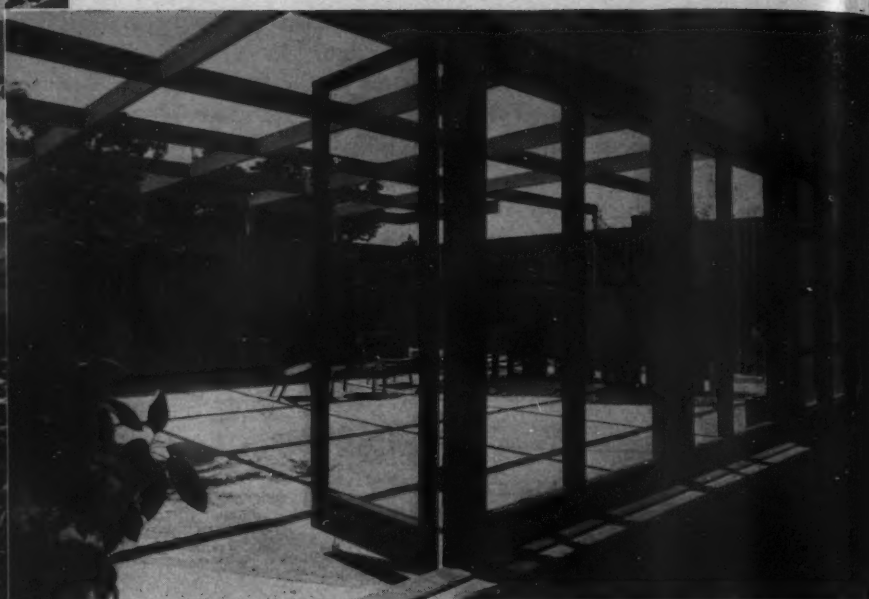
serves as entry, the privacy of the occupants is protected by means of a solid door and fixed obscure glass. Elsewhere the loggia opens freely to the patio and incidentally provides cross ventilation for the bedrooms and the living room.

The San Francisco area is justly famous for the quality of its residential architecture and the original work of its landscape architects. Less generally appreciated is the high degree of collaboration that has been attained between these two professions. The happy results of such a collaboration is exceptionally noticeable in this house, where it is difficult to find the line that separates the work of architect and landscapist.

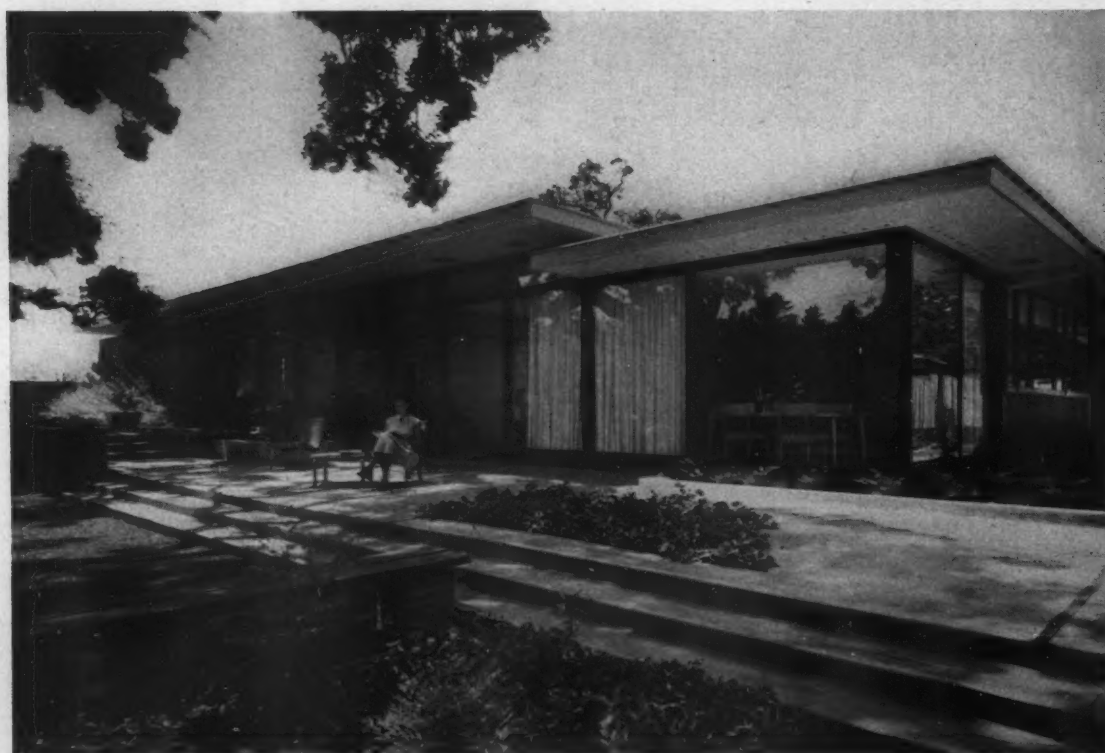
ATHERTON, CALIFORNIA

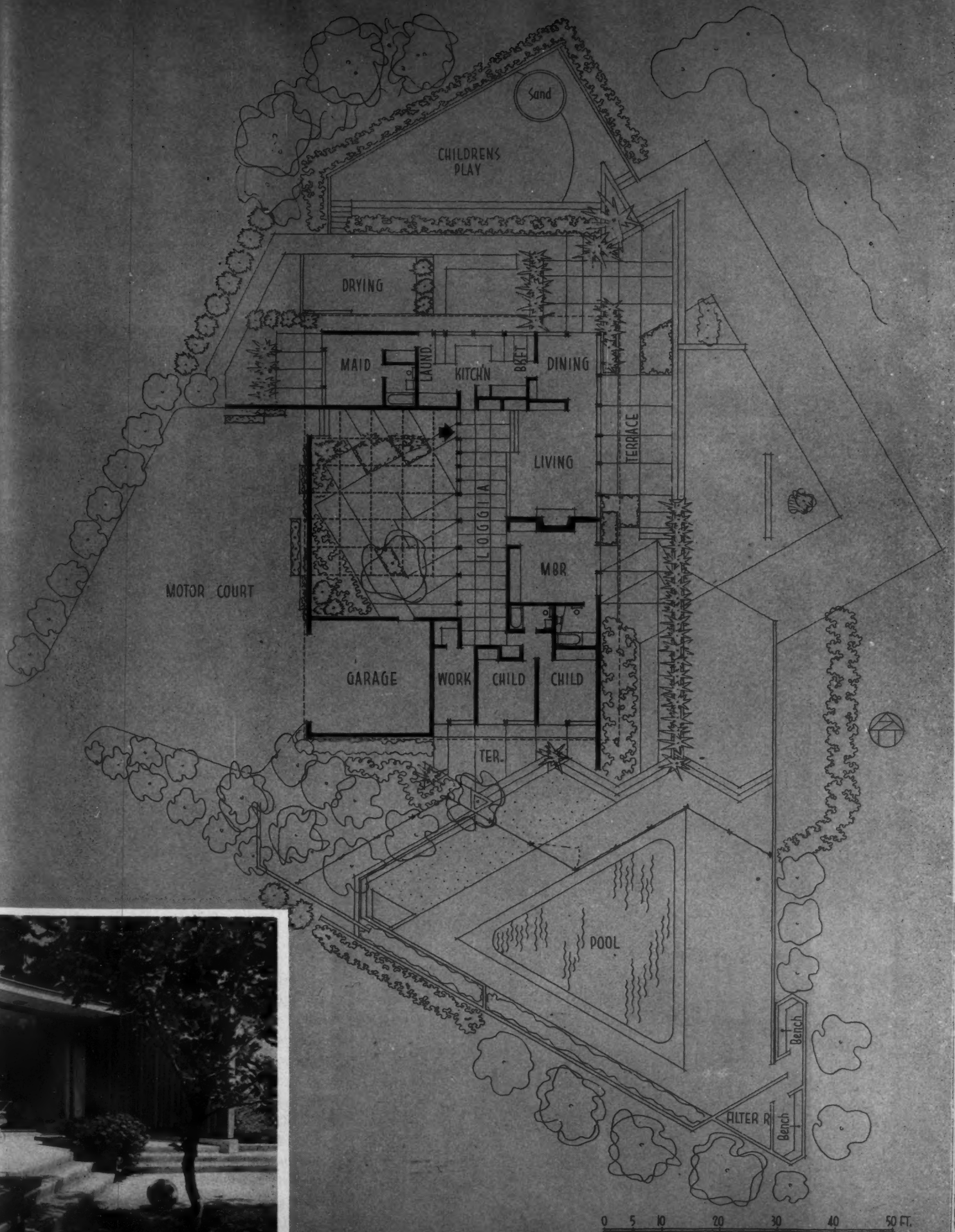


Ernest Braun Photos



Left: main entrance. Above: looking from loggia into patio; entrance walk is behind plant screen at right. Below right: children's bedrooms face south and have their own terraces and playground. On the north side of the house, there is another play area which can be supervised from the kitchen. Note on plan opposite that all baths are windowless with vents







ATHERTON, CALIFORNIA

Ernest Braun Photos



Above left: effective contrast of masonry, glass, and plant materials. Note that the big oak is also an important element in the interior design. Masonry walls on two sides of the living room serve to anchor the airy structure to the ground and give a feeling of security. Left: looking from living room into dining room and beyond to dining terrace. Skillful use of the change in levels permits the living room to have a high ceiling and clerestory windows. Bookshelves form the only separation between living and dining rooms. Glass wall is continuous across dining room, living room and master bedroom. Large sliding glass doors open all of these rooms to the terraces

IA

OLD GREENWICH, CONNECTICUT — EAST COAST

Residence of Mr. and Mrs. Walther Prokosch

Walther Prokosch, Architect

Joseph Molitor Photo



THE COMPLETE INFORMALITY of this house and the important place that children have in it are immediately apparent upon entering the large entrance hall. This room with its pleasant view through to the terrace and the small valley beyond, is also used for informal dining and as a children's playroom. A folding partition to cut off the playroom was originally intended but never installed. Both indoor and outdoor play areas are conveniently supervised from the kitchen.

The house stretches along the crown of a wooded knoll, with all rooms facing away from the road toward the south and the view. By fitting the car shelter inconspicuously into the hillside with informal stone steps

leading up to the house, the natural beauty of the rugged site has been preserved.

To compensate for four very small bedrooms, the living room is huge, taking with ease a grand piano, dining table, sofa and several lounge chairs. Further spaciousness results from the high sloping ceiling and the two glass walls with their big sliding doors opening onto terraces.

Masonry walls are cavity type, 4 by 4 by 16 in. concrete block, plastered or painted inside. Pine siding is used on frame walls and also for ceilings of major rooms. Heating is by wrought iron pipe in 3-in. concrete slab over 3-in. vermiculite concrete on 10-in. gravel.

OLD GREENWICH, CONNECTICUT

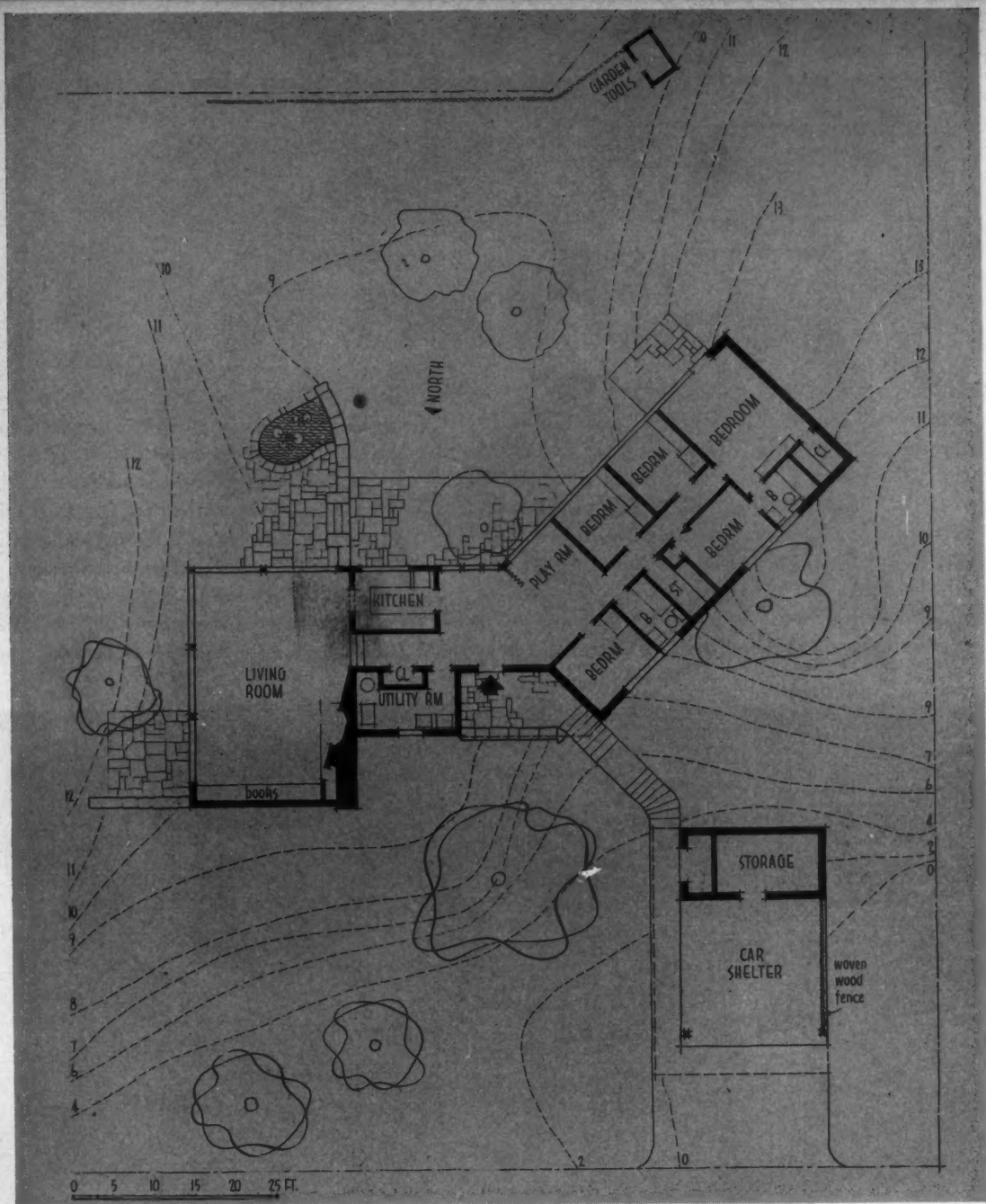


Above: glass doors to entry-playroom are behind the tree which helps the overhanging roof to shade the terrace in the summer. Kitchen windows overlook play terrace. Living room and terrace are at higher level. Plan: polite dining in the living room is facilitated by a serving hatch from the kitchen. Equipment includes electric water heater, dishwasher, laundry and dryer



Joseph Molitor Photos





WEST COAST — APTOS, CALIFORNIA

Beach Residence of Mr. & Mrs. Charles O. Martin

Hervey Parke Clark & John F. Beuttler, Architects

Thomas D. Church, Landscape Architect

MANY CONTEMPORARY HOUSES provide for outdoor living as an important auxiliary to the house. In a beach house the reverse is true, the house is merely an auxiliary to outdoor living. It is simply a cabana expanded to provide full facilities for comfortable outdoor life. The heart of the house, the real "living room," is not indoors but out. The design of this outdoor room lies in the province of the landscape architect.

The high quality of the landscaping and the sophisticated simplicity of the architecture mark the beach

house shown here as a product of the San Francisco area. The most important element in the design is the patio, which is designed primarily for use, secondarily for appearance. The house serves the patio by providing privacy and protection from occasional cold winds as well as furnishing all practical facilities.

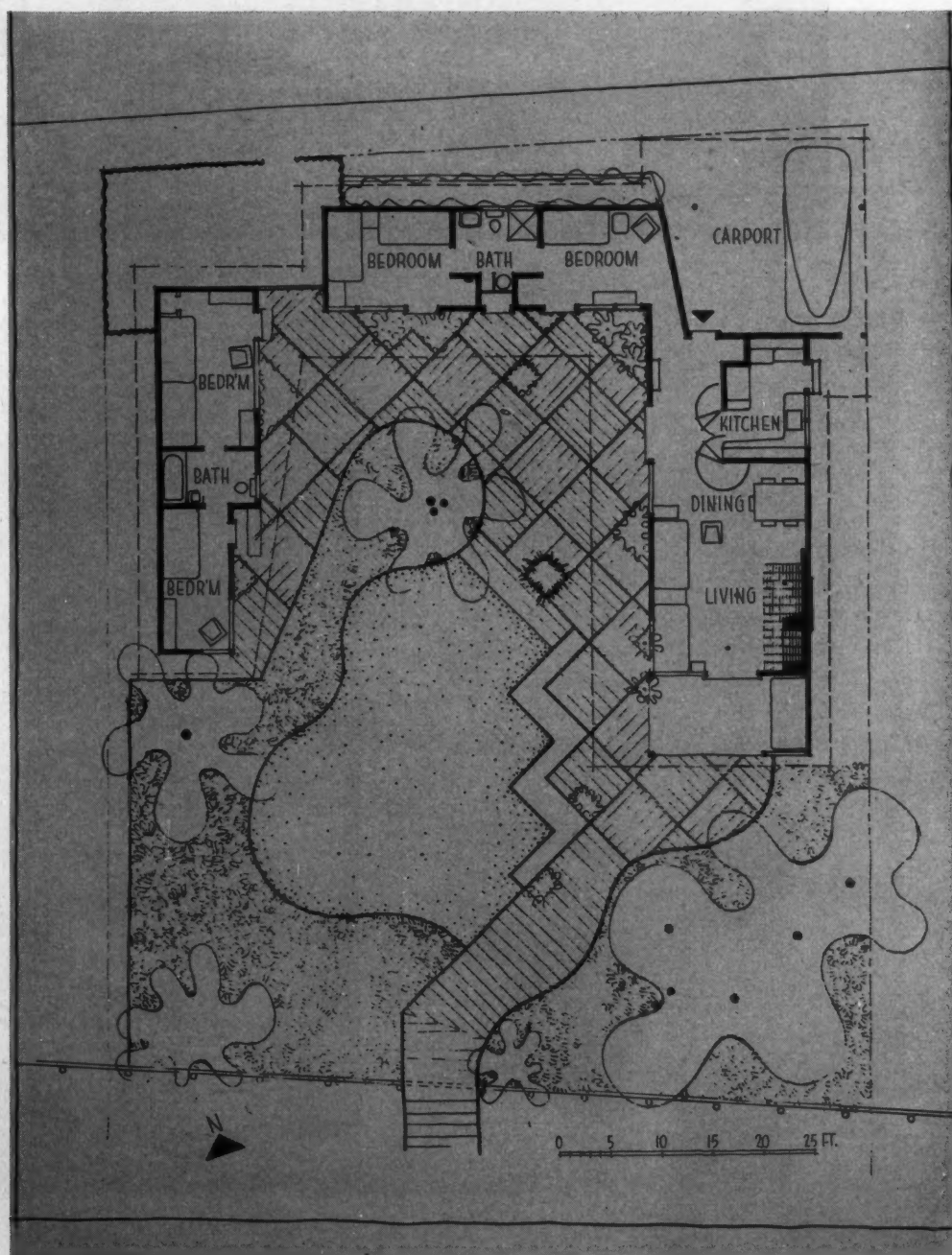
The site permits ideal orientation: the house faces the sun, the sea, and the summer breeze and is protected on the north by a cliff, which also makes a dramatic backdrop for the house as seen from the beach.



Roger Sturtevant Photos



Maximum privacy on the small lot has been achieved by means of the U-shaped plan with its enclosed patio. All rooms open on the patio which is used for circulation as well as for outdoor living. Provision has been made for the owners and their two grown daughters and several week-end guests. The west bedroom wing was an existing building which was adapted to the overall scheme



APTOS, CALIFORNIA



Roger Sturtevant Photos

Construction is of the simplest: exposed framing of 4 by 4 in. redwood posts 4 ft 0 in. o.c. and single wall of 1 by 12 in. redwood boards with 1 by 6 in. battens. Joists and roof sheathing are of fir, painted. Wiring is exposed. Concrete floor slab over membrane waterproofing forms the finished floor. Roof is topped with white marble chips for reflection of sun heat. Gutters and leaders are copper. Heat is furnished by fireplace and electric wall heaters



BETHESDA, MARYLAND — EAST COAST

Residence of Harry N. Hirshberg, Jr.

Arthur H. Keyes & Basil Yurchenko, Architects

THE ARCHITECTS were presented with the always difficult problem of designing a house for a site on the north side of the street. Their solution was to place the main living areas as far from the street as possible. Planting protects the privacy of the dining terrace and the living room with its glass wall facing the street. Privacy from the approach side is provided by the projecting service wing. The dining room and kitchen face the side lot line and the master bedroom and study

are on the rear (north), where privacy is not a problem.

The house is designed for the future addition of two more bedrooms and a bath, which will be reached by a corridor through the present guest room.

The isolated garage and the covered walks add to the apparent size of the house and serve to make an interesting spatial composition. The relation of garage to house will be more apparent after the expansion of the bedroom wing.

Robert Laurman Photos

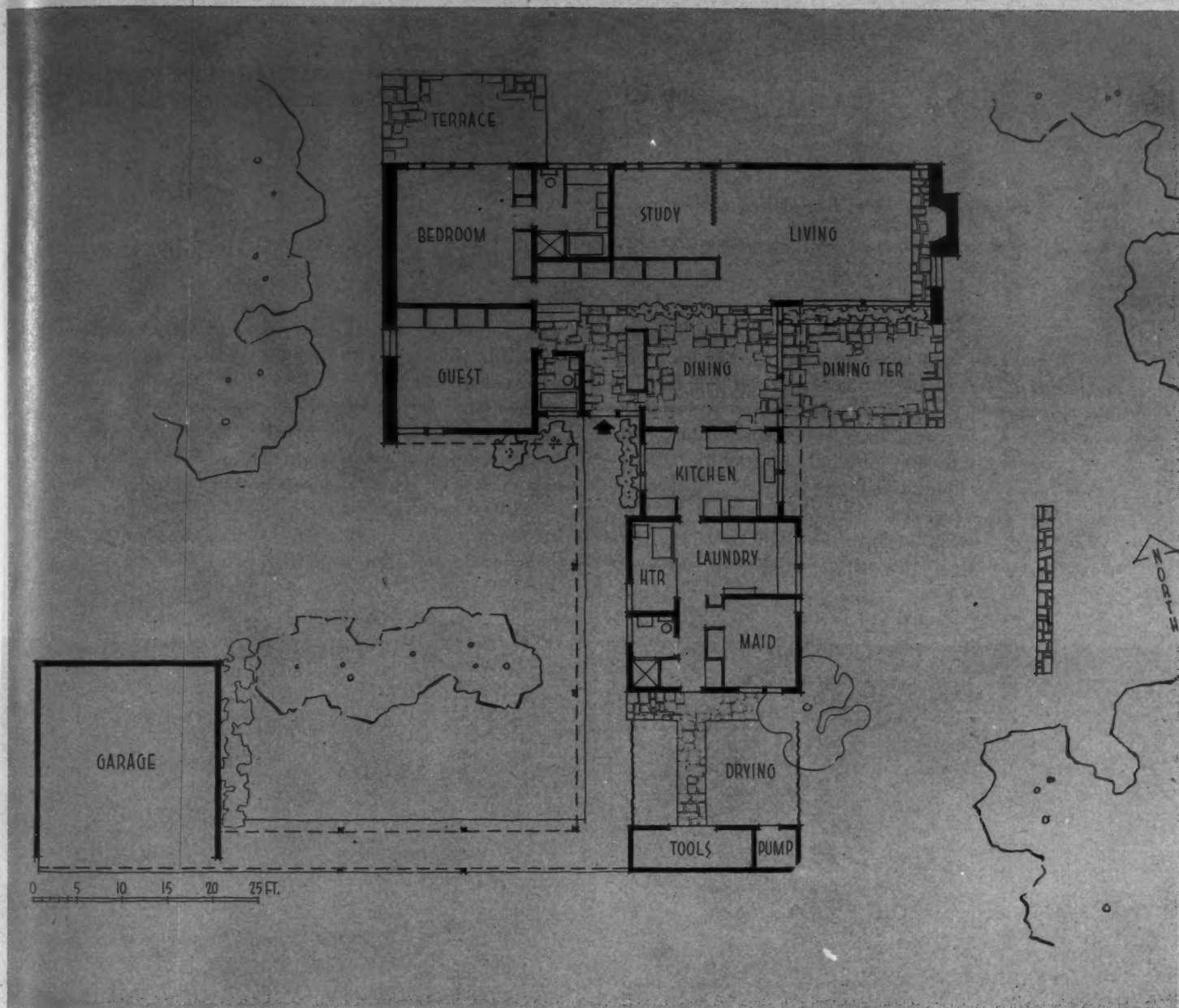


BETHESDA, MARYLAND



Clerestory windows give cross-ventilation to the master bedroom and also admit winter sunlight into that room and into the cabinet-lined corridor leading to the living room. All rooms have cross-ventilation and an attic fan removes excess heat from the kitchen, laundry, and heater room. Window shown on plan next to fireplace was omitted in actual construction (below)





EAST COAST — CROMPOND, NEW YORK

*Residence of Mrs. Benjamin Halprin
Stanhope Blunt Ficke, Architect*

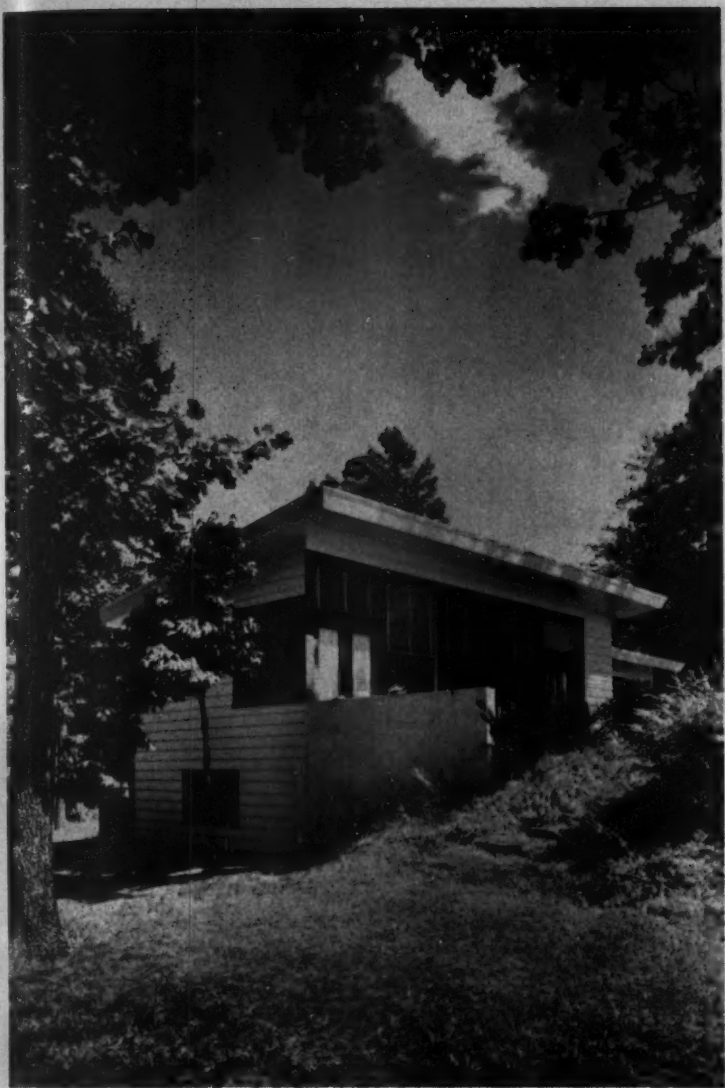
THE PARTI FOR THIS PLAN was established by the owner's desire to have maximum sun in the bedrooms and morning sun in the kitchen, and her requirement that indoor and outdoor living areas should overlook the view to the west, over a small lake to distant hills. The owner does considerable informal entertaining and requested spacious living and dining areas, as well as direct access from the kitchen to the front door.

The original design included a drive-through carport along the east side of the entrance and bedroom, and a

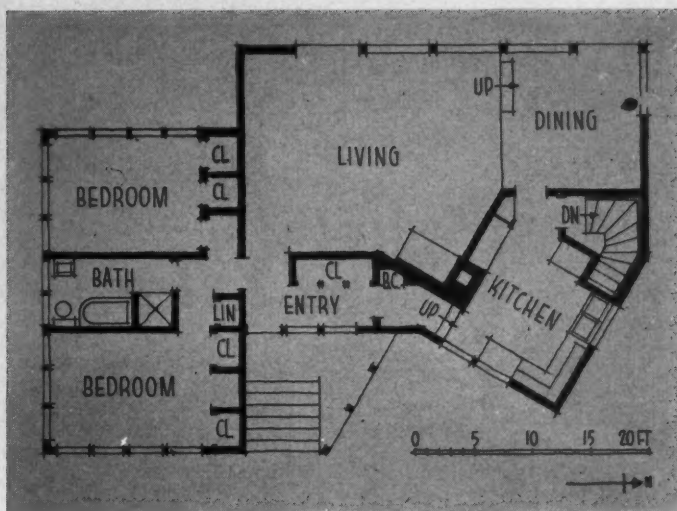
third bedroom and bath to the west of the present bedrooms. In the architect's opinion these additions, which were omitted for reasons of economy, would undoubtedly enhance the appearance of the house.

The steeply sloping site required a high stoop at the entrance, but had the advantage of permitting a partial basement to be placed under the kitchen. The basement, which has an outside door at grade level, provides space for the heater, laundry, shop, and storage for garden tools and terrace furniture.





Bill Marin Pictor



Kitchen and dining room are on a slightly higher level than the other rooms. All rooms have cross-ventilation. Corridor to future bedroom will utilize space now occupied by closets; new closets will be built between the two rooms. The view above gives an idea of the difficulties encountered because of the steep site





RAYMOND, WASHINGTON — WEST COAST

Residence of David M. Fisher

Paul Thiry, Architect

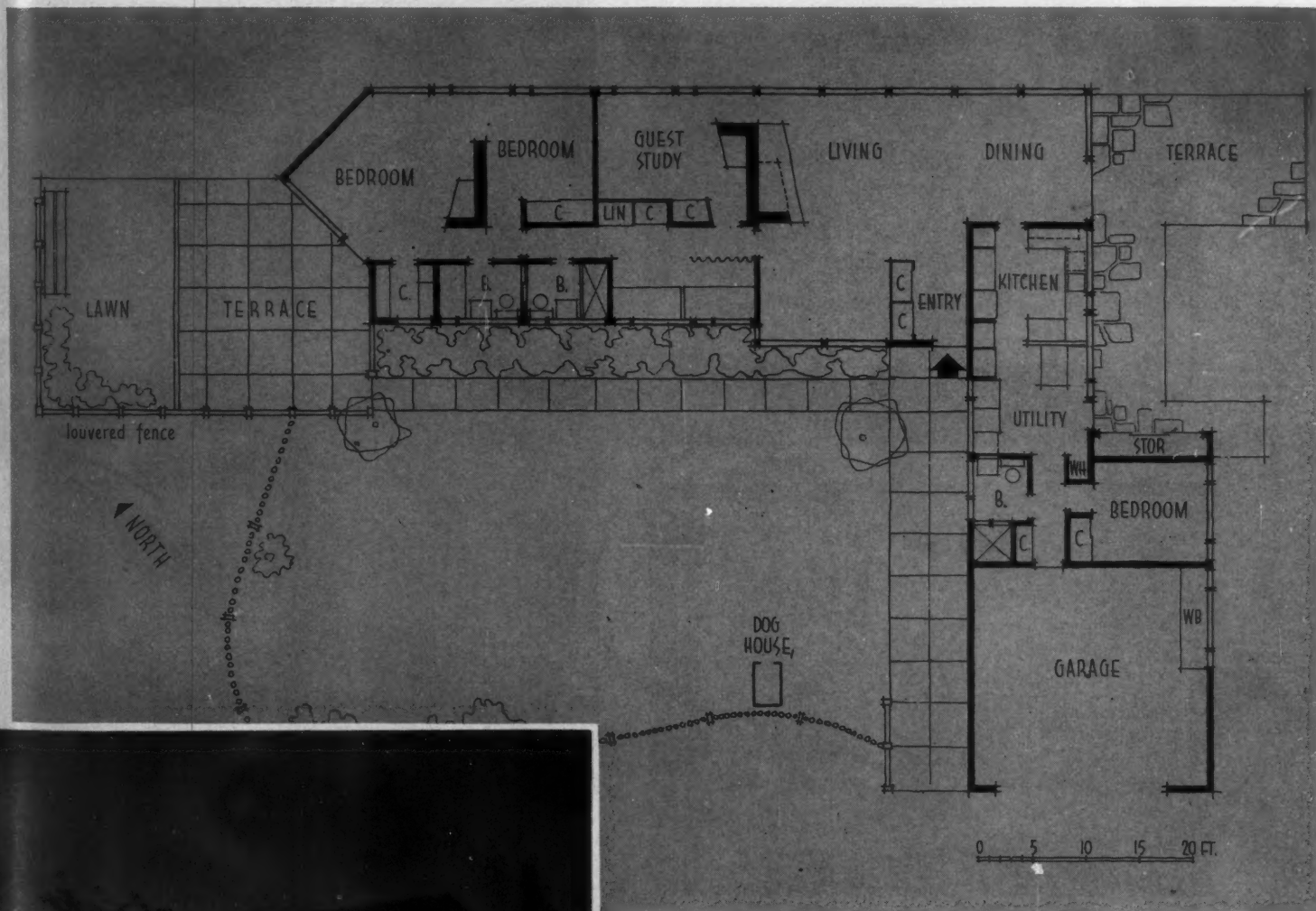
L. N. Roberson, Heating Engineer

THIS ALL-WOOD HOUSE for a lumberman is located in the heart of the Douglas fir country. The site is on a hill overlooking the town, the Willapa River, the harbor, and the lumber mills which, according to the architect, "add their smoke to the colorful haze at sundown." All major rooms face this view.

Southwest storms with abundant rain and overcast skies are frequent. These conditions are said to be ideal

for growing Douglas fir, but they do not favor extensive outdoor living. However, terraces have been provided on the southeast adjacent to the dining room, and west of the master bedroom.

The owners are frequently visited by their children and grandchildren. Overflow guest accommodations are provided in the alcove off the bedroom corridor, which can be closed off when desired by a folding partition.



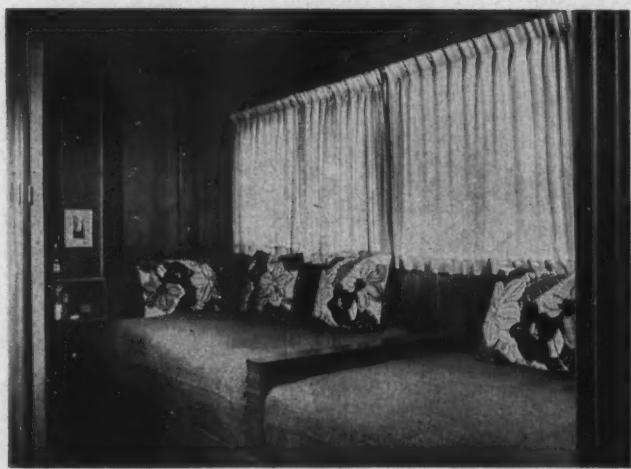
Master suite consists of two bedrooms separated by free-standing fireplace, dressing room, bath, and private terrace enclosed by louvered fence. There are also fireplaces in living room and study

Charles R. Pearson Photos



RAYMOND, WASHINGTON

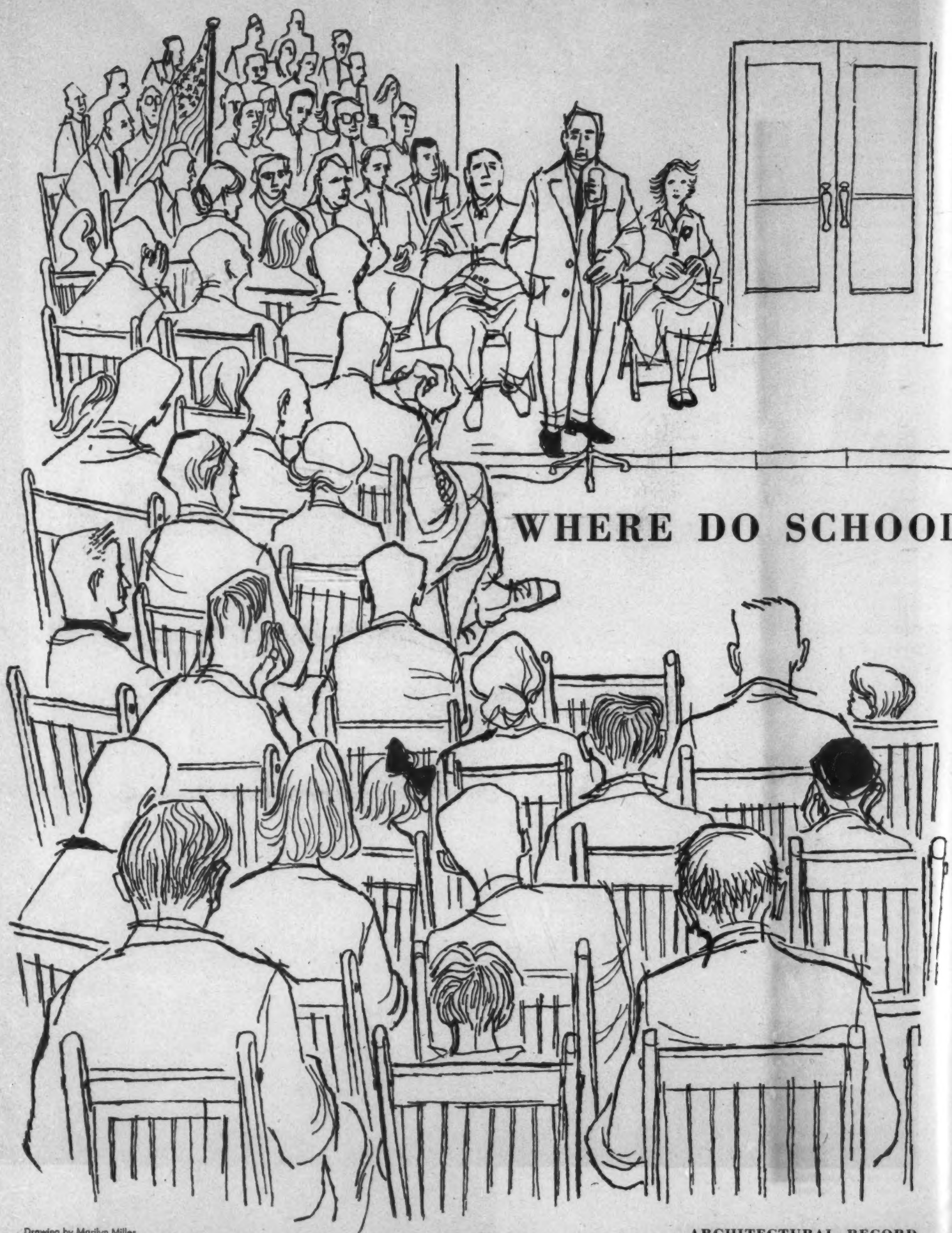
Living room, dining room, and entry are in effect one big room with a floor area of almost 600 sq ft. Higher ceiling over this portion of the house results in pleasing proportions and adds considerable interest to the elevations



Exterior finish is 1 by 10 in. bevel cedar siding, untreated. Interior walls and ceilings are 1 by 6 in. t. & g. spruce or cedar. Casement sash are Douglas fir. Roof is 5-ply with copper flashing and 3-in. rockwool insulation. Heating is by electric cable in concrete floor slab



Charles R. Pearson Photos



WHERE DO SCHOOL DES

Drawing by Marilyn Miller

ARCHITECTURAL RECORD

Newspapers and magazines are full of articles and reports on school construction problems. The shortage of steel, to whatever degree it may be actual or artificial at points of supply, is a very real factor in design and construction of schools. A committee of the American Institute of Architects has, as this is written, just about reached conclusions as to how much of various metals a school building can be expected to consume; and government officials are being hounded to release enough to ensure a substantial school construction program for the country. Whatever the immediate outcome of this activity, all signs point to an eventual release of some critical materials for this purpose. Meanwhile, we must continue to work ahead so that next month, or next year, we'll be all set to proceed with construction. We must make the best possible use of the public and of consultants, educators, architects, and administrators to produce schools which, as Mr. Seagers phrases it, have been designed in terms of the people who use them: pupils, teachers and staff.

OUR AMERICAN CIVILIZATION is in a state of flux. The days of "let the buyer beware" are rapidly passing. For the proper growth of our commercial and industrial economy it is now desirable to have a well informed purchasing public. On the other hand, in our political life we have galloped away from the old town meeting, where each man had opportunity to voice his opinion,

of accountability. "Throw the rascals out" has often been its battle cry. Its protest power has been great and very effective under some conditions (those without great patronage), as witnessed by the number of school bond referendums lost or the number of remonstrances filed. We have thought we could lull the public into an inactive status — or, even better, into sheep-like following — by intensive doses of information and propaganda. This we have called public relations. It has worked very well in many regions. However, it has lacked something: it was undependable; the public was not sure that it was not being hoodwinked; explosive elements were always too close at hand; it reeked with bureaucratic tendencies. In attempting to uncover a potential dynamic power of the public amazing discoveries have been made.

In most cases it was found that the public was *thinking*, and would take a stand far in advance of its leaders. School people and architects actually were conservative when compared with an organized public. The big problem was how to get the public organized without catering to special interests, so that its tremendous power could be released and directed into creative rather than protest channels. It was discovered that the dynamic power of the public was not the sum of the power of the

OL DESIGN SPECIALISTS FIT?

By Paul W. Seagers *

into an age of bossism, money politics and interests regional, occupational and industrial. Centralized power, minority pressures and the emergence of authoritarian technical, economic and political specialists have brought about a reign of non-elected bureaucrats; and yet, at the same time there is much searching to determine the responsibilities of the public in all phases of American life. One can predict, almost certainly, that public officials — elected, appointed or just hired — not only will be held responsible for their acts but also will be assisted in formulating policies and determining the scope of their work. The office holder and the specialist, which in the field of education includes the teacher, the architect and several others, will have to discard the dictatorial attitude and work with the public. Who is the public? How does it become articulate and vocal? How, when, and where do the great many specialists function? With whom rests the final legal responsibility for making decisions? How and by whom is the project or study initiated? These questions must be answered if we are to proceed intelligently in planning public school buildings.

The Power of the Public

The term *the public* conjures up a nebulous form in the average mind. We know it is real because we have had many dealings with it. Its composition is always Mr. and Mrs. Citizen but its leadership and interests frequently change. It is seldom aroused, but when it is it may get violent. In the past it has felt secure in its power

individuals nor the emotional release of a mob. It embodied the blueprint of a well planned campaign, the financial generosity of a war bond drive or a catastrophic emergency, the coordinating action and enthusiasm of an old-fashioned barn raising and the flood of continuing interest which no mental or physical levees can keep within bounds.

Recently, techniques for releasing and directing this dynamic power have been worked out and used successfully. They include selection of the nucleus of participants on a socio-economic, geographical and organizational basis; fusion of highly diversified interests and age groups into functional committees; development within the individuals of loyalty to the project at hand rather than to organizational interests; definition of the legal and moral scope of their work; and determination of the place of the specialist in the study. In such ways we can bring back something of American grassroots democracy. The public must now have a place at the planning table where it can help avoid mistakes and assume its share of responsibility. It cannot replace the specialists and experts, architectural, engineering or educational. However, the public can be organized to become articulate, to present its needs, and to check developments in terms of those needs. Many architects are aware of this trend and are adjusting to it. Others will soon find themselves unable to produce a set of

* Associate Professor of Education; School Building Consultant; School of Education, Indiana University.

drawings based upon no exact educational specifications for superficial approval by uninformed school officials. We must have more specialists trained in group dynamics and in tapping community resources.

Responsibility to the User

In planning public school buildings, the user is frequently forgotten, or at best becomes a statistic, a standard or an area. We cannot much longer justify fees for custom-designed school buildings when those buildings are really a slight rearrangement of standard units wrapped in a style of architecture which types the architect. If that is all we want, let's buy pre-fabs. Yes, I know the architect is not wholly to blame. The public is anxious. The school authorities know neither their needs nor their wants. Nevertheless, the average architect is to blame in that he does not encourage extended study, which costs him money. I know a few who will even discourage any reasonable study by school officials once their contracts are signed. This type of action by a few is unfair to the entire architectural profession. It is time for each school architect to demand from the school officials a set of educational specifications or a study of the needs based upon the projected use of the plant.

Will the plant enhance, physically, mentally and emotionally, the pupil's growth? Will the physical and psychological impact of the proposed environment retard or enhance development of the individual pupil? Is the elementary plant designed on an adult scale embodying an adult's idea of monumental architecture, or is it simple, with plenty of interest centers and a bright harmonious ensemble of color? Do the special rooms in the high school resemble anything pupils will come in contact with in adult life? Have the functions of each area been thought out well? Have teachers and custodians been consulted? Frequently they can add many ideas; likewise many will have no constructive ideas. If the building is to be used for community or other functions, these also must be taken into consideration. Many other questions can be added; the important question is, *Has the building been planned from the inside out in terms of the people using it, namely pupils, teachers and operational staff?*

Responsibility to the One Who Pays the Bill

That the one who pays the bill can call the tune is seldom true in school building planning. The public as we commonly think of it may pay only a fraction of the bill. Long-term bonds frequently force the users, the pupils now in school, to pay; absentee owners and corporations often pay the lion's share. State and federal school support forces still other noninterested people to share the burden. We do not debate the right or wrong of this situation; it is here and we must face it. Like most governmental employees, school authorities are spending the funds of many people who cannot hold them directly responsible. This trust makes it all the more necessary to plan school buildings which will operate efficiently, economically and safely. Expensive architectural license cannot be condoned. In this connection it might be discovered that a thorough re-evaluation of building codes in light of recent research could materially reduce the cost of school plant construction.

Responsibility of the Elected or Appointed School Official

In most places the board of education, board of school trustees or township trustees, all composed of duly elected or appointed officials, is responsible for construction, maintenance and operation of the school plant. In some localities construction comes under a different board or commission. These boards of school officials are primarily concerned with determining policy, although they must legally approve and authorize the signing of contracts. Even though they hire an administrative officer, they cannot shirk their responsibility as the board of final authority except for legal appeals to the state government. Outside of large cities, few board members ever go through more than one school building program. Not many have the experience to direct a construction program. They do not know how to identify their problems. The application of known principles to the solution of those problems is beyond their command, and a reasonable method for selecting an architect is unknown to them. They have been at the mercy of pressure groups, salesmen-architects and perhaps uninformed school administrators. The honest, public-spirited citizens who serve their communities on boards of education certainly have my sympathy. For the most part they want the public's help, but fear organized opposition. The National School Boards Association and various state school board associations are now coming to the aid of the board member, informing him of his responsibilities and rights and recommending methods of procedure. Many boards are now able to hire trained administrative officers and educational consultants.

Many universities and private organizations can assist with surveys and studies; and state departments of public instruction, although not staffed for extensive service, can direct the boards to other sources. Selecting the architect is one of the most important tasks the board has to perform. Unfortunately for the profession, there are a few so-called architects, job-chasers or salesmen-architects, who use unscrupulous methods for obtaining contracts, a practice which reputable architects do not approve. Interestingly enough I have never heard a board member criticize the work of an architect he has helped hire. Either he has to justify his action, or the new plant is so much better than the old that he cannot conceive that, like too many buildings today, it has been planned poorly on an expedient basis.

Responsibility of the Administrative Officer

The administrative officer in most school corporations is the superintendent of schools; in others it is the district or supervising principal. The administrator has a threefold function. He provides educational leadership to his area. He is an adviser to the board, and he acts as the executive officer in carrying out board policies and state laws in the operation of the schools. He is directly responsible to his board of education. A good administrative officer can help the board study its problems, promote real public relations by bringing the public into planning, recommend the services of specialists, provide educational specifications for the architect and provide the board with background from which it can draw logical conclusions and make reasonable decisions.

Although he has no legal responsibility for making decisions, his influence should be felt throughout the entire planning process.

The State Office

The responsibility of a state office in school plant planning ranges from complete authority in some states to none in others. Even in those states which give it complete authority, lack of state staff precludes much service except inspection and approval of plans with superficial inspection of the completed plant. Probably the greatest service that a state office can perform for a school corporation is to provide leadership and some assistance in helping that corporation study and solve its own problems locally. Certainly educational leadership and the application of recent research to planning is much more desirable for state offices of education than the dictatorial administration of codes. Code influence on design should be kept at the very minimum necessary for comfort, health, safety, and educational development of the child.

The Architect

The architect is a specialist who takes ideas and from them evolves a design whose instruments, the drawings and specifications, enable the builder to erect the tangible structure. The architect must be an artist, an economist, a dreamer and yet a realist. He must have a sense of color and design and be practical in selecting materials. His artistry must further — it cannot be permitted to conflict with — the fulfillment of function. His work is judged by the people who use his creations, by those who just admire the architecture and by the numerous others who pay the bill. The people affected most by his work, the pupils, have little to say and are not aware that his work has an effect upon their lives, that, in fact, the architects of the past have had a profound influence upon the educational programs of today. In other words, many existing educational programs have been conditioned, not always beneficially, by architects rather than educators. The architect is not wholly to blame for this. Many educators have failed to provide architects with statements of their educational needs or educational specifications. On the other hand, some architectural firms, even well-known ones, once they have received a contract have disregarded the educator and taken full responsibility for planning. Remarkably enough, some did some excellent jobs for their period. Such a procedure, however, cannot be approved today.

We must recognize that the architect is not an educator; he needs the help of the educator in planning an educational building. I once heard an architect say that if he were planning a house he would want to live with the proposed occupants for several weeks to study their habits. How much more difficult must it be to study the functions and uses of educational areas before planning a building! Yet the architect requires this information in addition to other pertinent facts. The architect, an important man, is a member of a team each of whom has his own function to perform in coordination with the others. The educator must be in the picture before the architect, and he certainly is there long after the architect's work is finished. This is not to belittle the work of

the architect, but just to place it in normal sequence and recognize it as a specialization infrequently required by the average school corporation, whatever its importance.

The Educational Consultant

The educational consultant or school building planning consultant is indigenous to the educational soil. His is a new profession growing out of the need for a specialist trained and experienced in education to help the busy superintendent and board of education with their school building planning problems. He needs to have had experience as a classroom teacher to give him the "classroom feel" quite necessary in understanding the problems of the teacher. Experience as an administrator will acquaint him with the many administrative problems, including budgeting. In addition he should be well grounded in modern educational philosophy and methods. He should understand how the child grows and learns, and the nature of the impact of environment upon the child both physically and psychologically. He should be mature in judgment and should have had some practical construction experience such as inspector or clerk of the works. It is not necessary for him to be an engineer or an architect; in fact it is desirable that he be neither. He should think in terms of children, not formulas or codes. If he is primarily a school man, the administrator is likely to go to him first. He can help the administrator survey his community. If he is informed and experienced in real public relations and group dynamics, he can help school authorities set up a program for bringing the public into the survey and planning process. The educational specifications can be developed under his guidance. He can suggest methods for interviewing and selecting architects. He can interpret the educational specifications to the architect, and in many other ways act as liaison between the architect and school officials with the object of saving both parties time and energy.

It must be said here that his services are only advisory and consultative, and he must not at any time assume authority for making decisions. He should check plans and specifications during progress to see that they meet educational requirements. His thorough knowledge of the background of the corporation, coupled with his predictions of growth in both size and direction, and of likely changes in school organization, will assist the architect materially. Other information such as community use, dual use of space, relationship to city playground, recreation and park commissions, relationship of this unit to other school units, and expansion possibilities all can be provided by the educational consultant. He will in no way hamper or detract from the work of the architect. He is more likely to stimulate and contribute to improvement of his work.

Where do we fit? In this complicated life of today we had better fit together. We must work as a team, from the public through school officials, architects, and educational consultants. Let us recognize the power of the public, the professional status of the specialists, the responsibilities of the executive officers and the legal rights and obligations of the boards of education to make final decisions. Only as we do this can we hope to provide good educational environment for children.

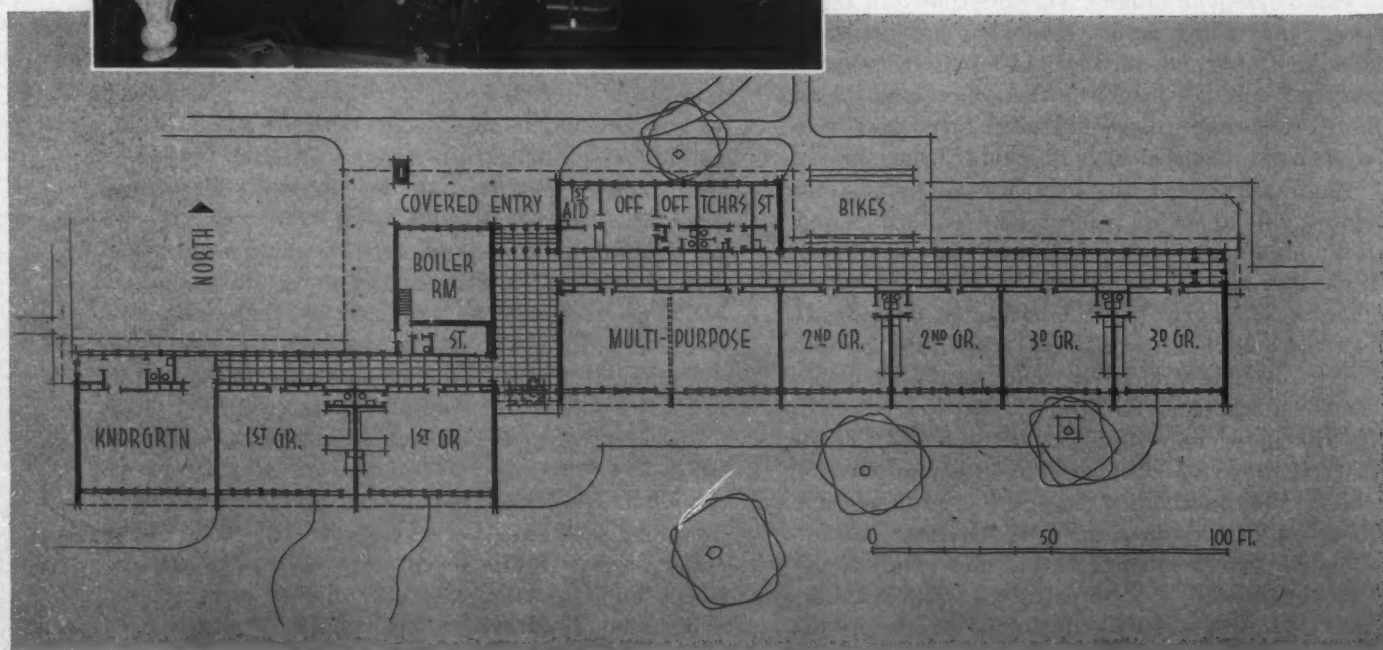


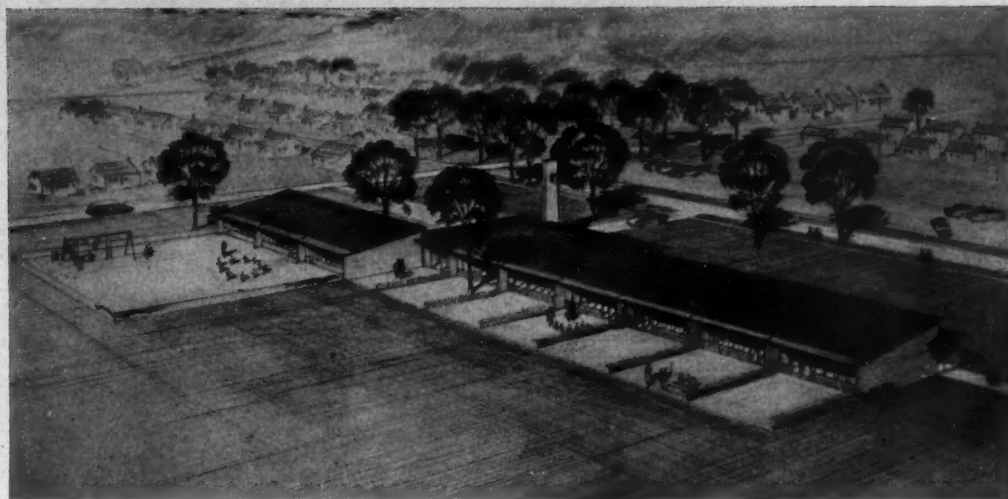
Richard Shirk Photos



TORRY

Swanson Associates, Architects



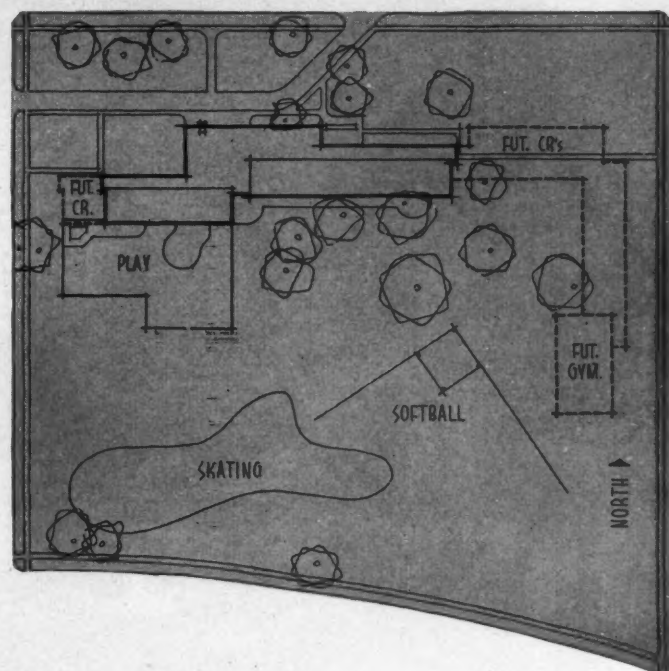


Paul S. Calkins, Structural Engineer

Hyde & Bobbio, Mechanical Engineers

Wilcox & Laird, Landscape Architects

ELEMENTARY SCHOOL, BIRMINGHAM, MICH.



GIVEN AN AWARD OF MERIT by the American Association of School Administrators at its 1951 convention, Torry Elementary School has now entered a second year of use in a rapidly expanding section of Birmingham. The building, for elementary school children, was required to be in scale and character with its excellent residential neighborhood. The eight-acre site is level and has several fine large trees. Classrooms were conceived as self-contained units with individual toilets and work spaces, and each with direct access to the playground. The building had also to be designed to permit future addition of one more kindergarten, four more classrooms, gymnasium, library and expanded health facilities. Ultimately the building is thus to have two classrooms for each grade, kindergarten through sixth.

Above all, the present building (kindergarten through third grade) was designed to ease the child's transition

from home to school. As far as a school can be made homelike, this one has been, by careful proportioning of spaces; by selection of equipment, furniture and furnishings, under the control and supervision of the architects; and by the delightful use of color as shown in the color photograph on the cover of this issue. Visitors thoroughly familiar with schools here and abroad have called Torry one of the best elementary schools built in the past year.

The school has a steel frame; concrete floor slab on grade, asphalt tiled, with radiant panel heating; poured gypsum roof slab; brick exterior walls, partitions between classrooms and along north wall corridors. Fir paneling is extensively used; doors and trim are birch; ceilings are mineral acoustical tile. Lighting is incandescent throughout. In addition to a toilet, each classroom has an enameled sink and a drinking fountain.

TORRY ELEMENTARY SCHOOL



Richard Shirk Photos



Above, entrance lobby, furnished like a living room. Left, corridor; fir-sheathed wall can serve as display space. Below, typical class-room. Total cost, not including site work, furnishings, equipment, or fees, was approximately \$217,400. For 210 pupils, this amounts to \$1035 per pupil; at 16,195 sq ft, to \$13.42 per sq ft; or 200,887 cu ft at \$1.08. In these figures are included \$11,307 for electrical work, \$27,253 for heating, \$15,166 for plumbing



MILL PLAIN SCHOOL, FAIRFIELD, CONN.

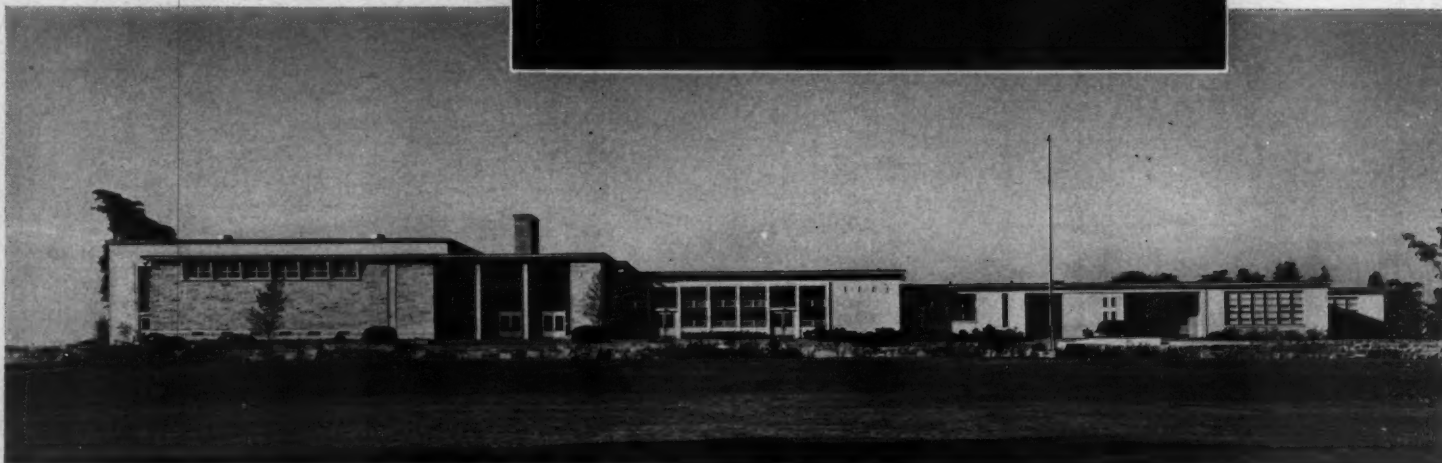
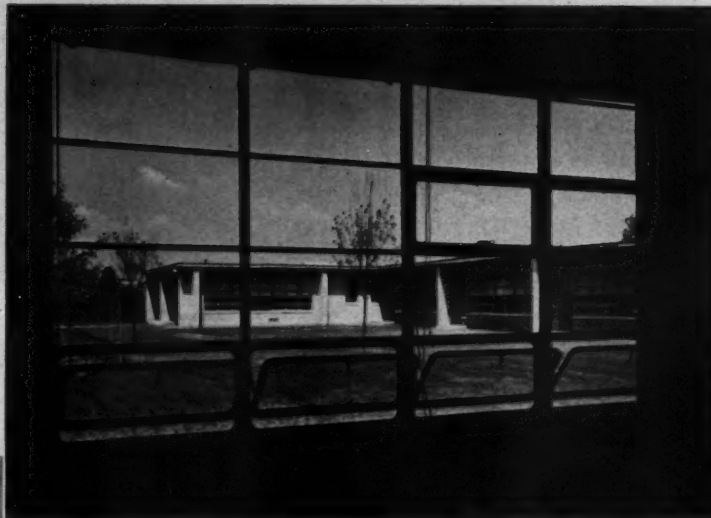
*Lyons & Mather,
Architects*

*Ernest D. Mortenson,
Structural Engineer*

*Hoffman Associates,
Mechanical Engineers*

*Howard Harper,
Electrical Engineer*

*Evan Harding,
Landscape Architect*



Joseph Molitor Photos

MILL PLAIN SCHOOL, for children from kindergarten through eighth grade, provides a clear instance of the coordinated functioning of three distinct entities: educational authorities, citizen groups, and architects. Fairfield is a growing Connecticut town with a substantial number of businesses and industries of its own and yet a preponderance of commuter families whose livelihood comes from nearby Bridgeport and more distant New York City. Its large population increase during the recent postwar building boom overcrowded its existing schools. The result was an unsatisfactory series of double sessions just at the time when a new school administration, under Carlyle G. Hoyt, Superintendent of Schools, took office.

The new administration instituted a comprehensive study of anticipated needs which indicated a yearly increase of about 10 per cent. Because there existed a number of undeveloped yet potentially desirable residential areas, this rate of increase was expected to continue for an indefinite period. In determining the most desirable location for a new school the administration

consulted local realtors, prepared pupil population maps designed to show changes both in advance and as they occurred, began the chore of redistricting the community, and thus determined the geographical area of greatest immediate need, one in which a school to accommodate a large ultimate pupil load could for the time being take seventh- and eighth-graders from three surrounding districts, which would temporarily relieve three overloaded schools.

This procedure began to define the educational and building program by requiring such facilities as physical education, shop and homemaking for older students on a semi-departmental basis, as well as an elementary curriculum for younger pupils. Details of the program were developed with the assistance of a number of teacher committees on primary, intermediate, upper, special education, administration and maintenance. Townspeople were consulted to determine what provision should be made for community use of the school. So reasonably and thoroughly was this, the educational specialists' phase of the work, conducted that there

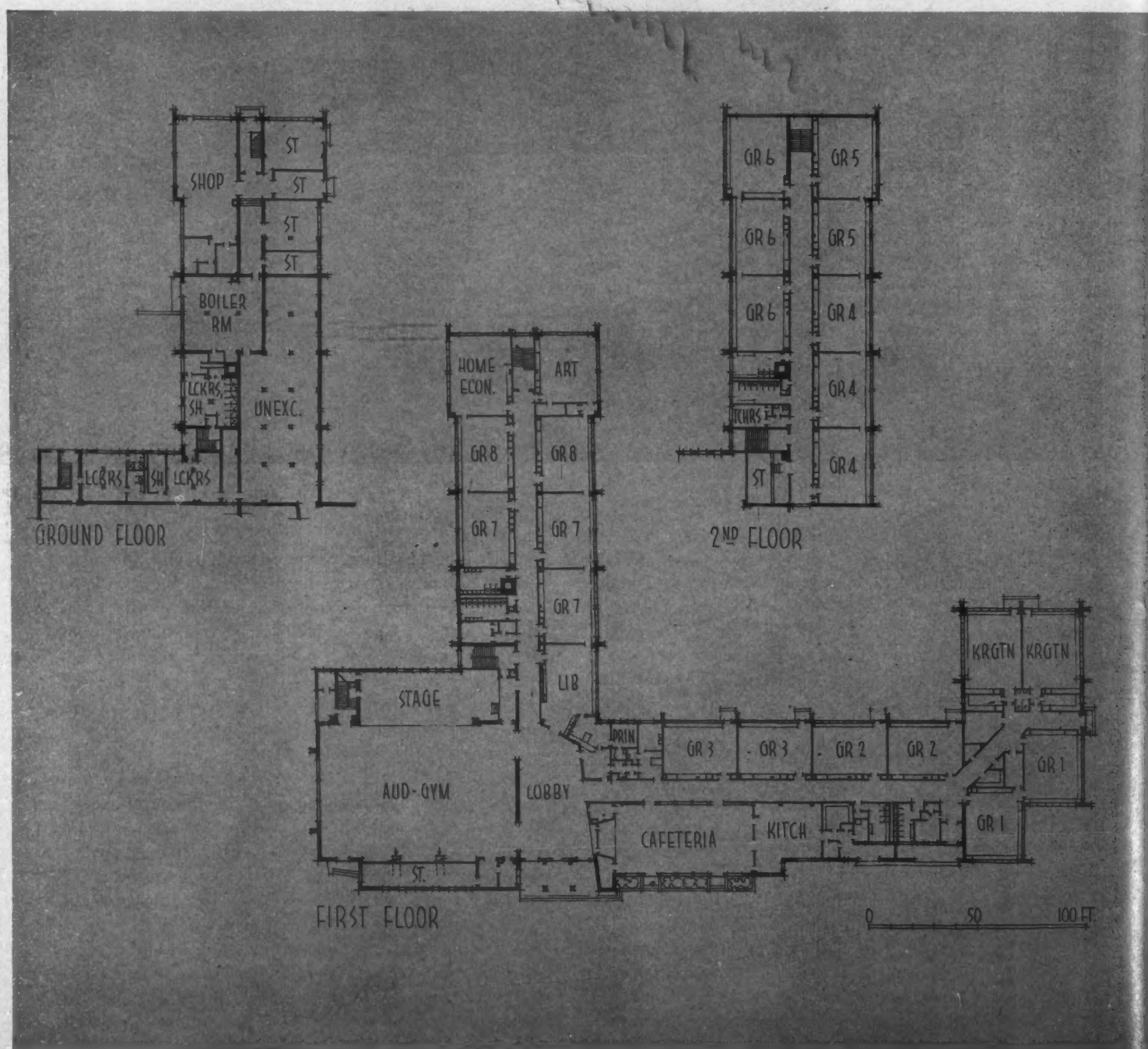
MILL PLAIN SCHOOL

was little or no public opposition when the time came to ask the town to appropriate nearly \$1,200,000 for the new building and its site.

Meanwhile, as required by state law, the Fairfield Town Meeting Representatives had appointed an eight-member Mill Plain School Building Committee, of which Mr. E. H. Staber was chairman. The Committee's first task was to review the Board of Education's recommendation, based on the school administration's findings. The Building Committee decided that the school needed four more classrooms than had been asked for; its decision was approved in Town Meeting and the new school has 22 classrooms. Also on the Committee's advice, a 20-acre site was selected and bought, and the architects were commissioned. The Committee was extremely active in investigating ma-

terials, equipment and types of construction, and in overseeing the progress of the work. To facilitate their job the Committee distributed among its members several "job assignments": structural, mechanical, equipment, landscaping, administrative, etc.; a procedure which effectively increased each member's interest and responsibility.

While the program was thus formulated by the town's educational authorities and given direction and substance by its lay citizens, "Lyons and Mather," says Superintendent Hoyt, "are solely responsible for design." He adds that cooperation of all bodies concerned was excellent, and that the architects worked so closely with various committees and the administration that it would be impossible, speaking in terms of function, to say where many ideas originated.





Joseph Mollitor Photos



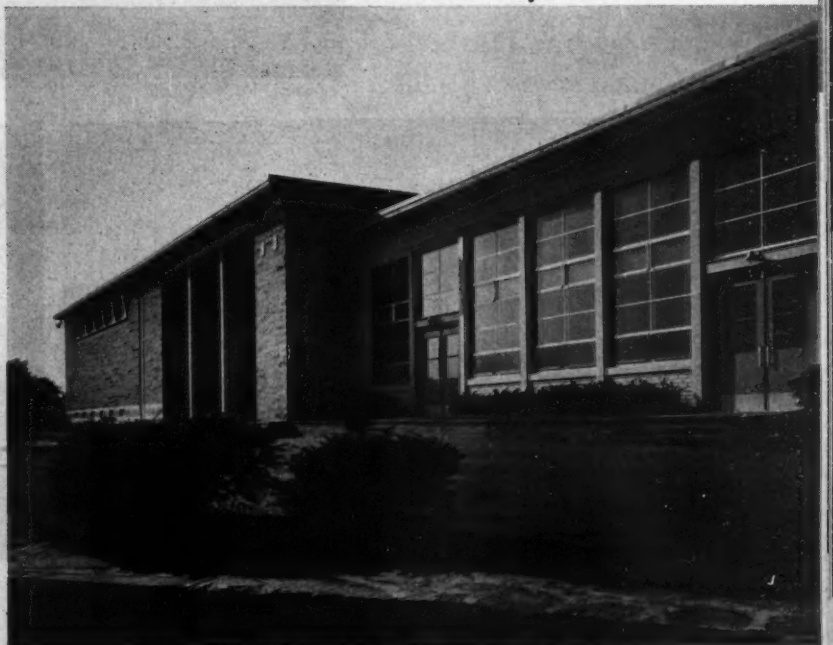
Plan, taking advantage of hilltop site adjoining a small park, effectively separates kindergarten, lower elementary and upper grades, permits closing off publicly used areas. Amphitheater-parking area serves also as hard-surfaced play space



COST DATA

General Construction (incl. mechanical, electrical, built-in equipment).....	\$ 860,000	No. sq ft.....	62,500
Site acquisition.....	30,000	Cost per sq ft (based on Gen- eral Construction).....	\$13.70
Site improvement.....	68,000	Present enrollment.....	600
Equipment, Furnishings.....	85,000	Cost per pupil.....	\$1433
Fees, Miscellaneous.....	97,000		
Total.....	\$1,140,000*		

* Design and construction economies made it possible to return to the Town of Fairfield approximately \$50,000 of the nearly \$1,200,000 appropriated.



MILL PLAIN SCHOOL

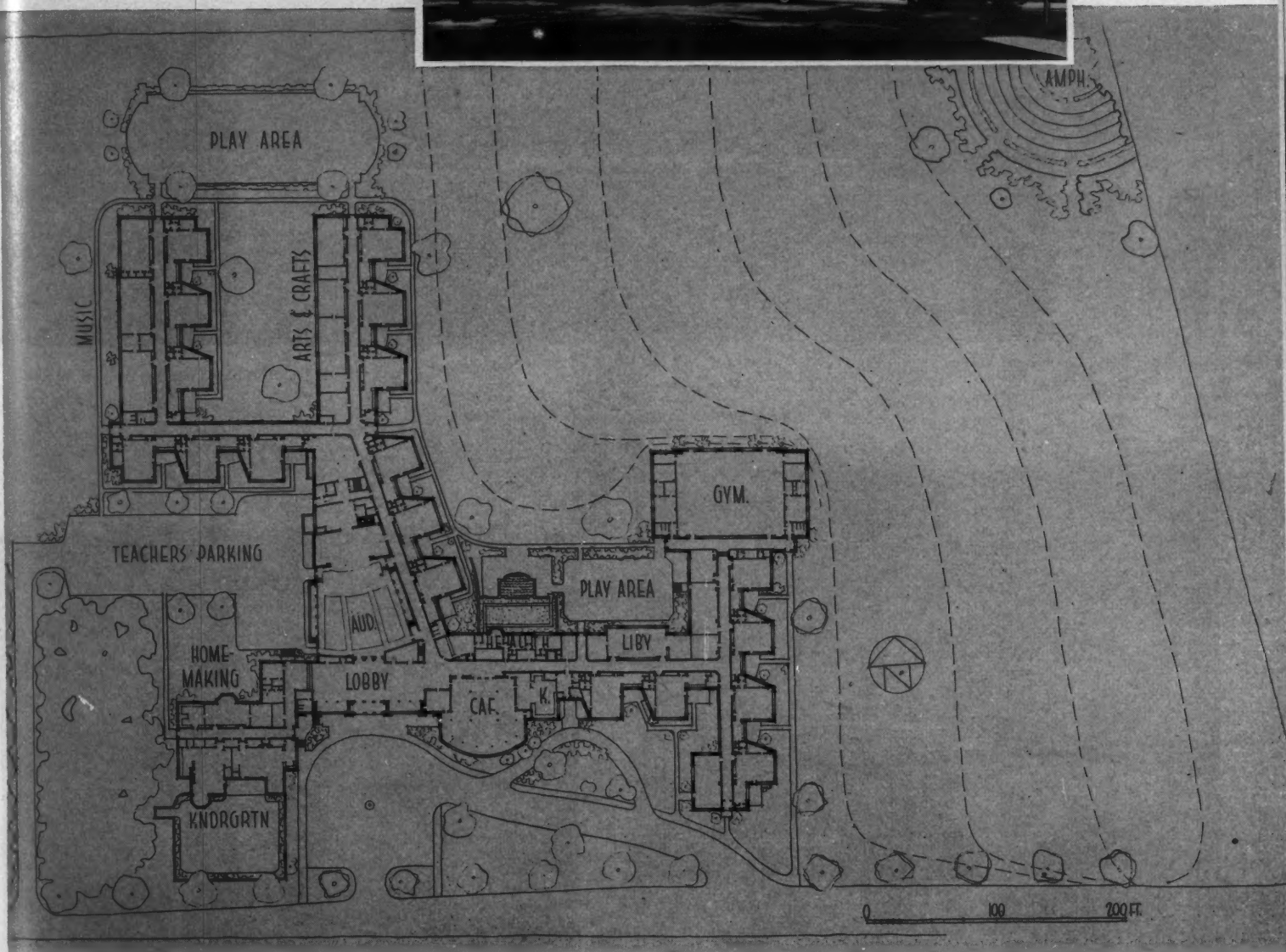
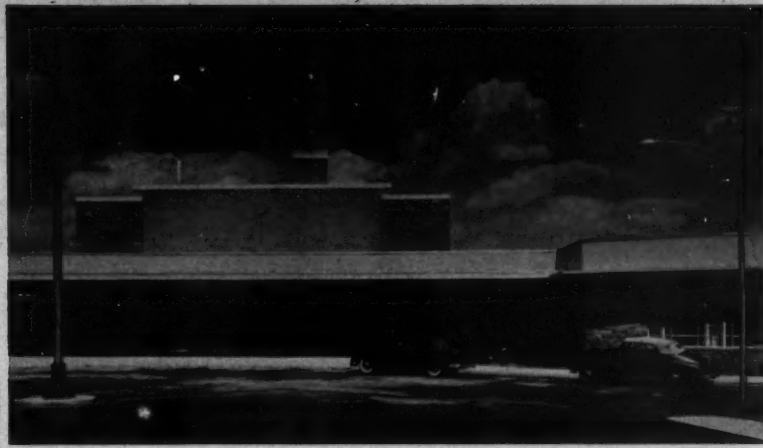


Upper left, lobby, used for bad-weather play, etc. Upper right, gymnasium-auditorium, with stage designed for curtaining off for band practice. Right, cafeteria with small stage. Three views at bottom, typical classroom, home-making, shop



Joseph Mollitor Photos





PENN VALLEY SCHOOL, LOWER MERION, PENN.

Walter T. Karcher & Livingston Smith, Architects

JUST OPENED, Penn Valley is an elementary school in which kindergarten, grades 1-3, and grades 4-6 are grouped, each with its hard-surfaced outdoor play area, so that there is little cross-traffic between age groups. The School Board presented the architects with a full program, detailing requirements to meet a high standard educationally and in consonance with the standards of its well-to-do community. The Board asked that all classrooms be self-contained, with individual toilets,

cloakrooms, work alcoves, warm floors especially in lower grades, and above all east, south, and southwest exposure; and, though this goal was not quite reached, wanted classrooms about 30 by 35 ft in size. As to general character, the Board stated: "In securing standards that do not violate community standards we would like to have a school that has warmth, individuality and special appeal to little children, as far as this can be realized within reasonable costs."

PENN VALLEY SCHOOL

Gravell & Duncan, Structural Engineers

A. Ernest D'Ambly, Mechanical Engineer



Joseph Mollitor Photos



The architects are well aware of development of "finger" plans for schools elsewhere in the country; they have consciously tried to adapt this type of scheme to obtain harmony with local conditions. In plan, they have placed the auditorium and cafeteria centrally to reduce walking distances, and have arranged them and the gymnasium so they can be shut off from the rest of the school, with separate heating, ventilating and lighting systems, for community use. All rooms and corridors have asphalt tile floors on concrete slabs, with integral radiant heating except in auditorium, gymnasium and lobby. Ceilings are uniformly acoustic tile, with increased acoustic treatment in music rooms. Ducts for ventilating air are carried in corridor ceilings, which also carry the other utilities — water, steam, electricity — thus eliminating sub-floor trenches. Glass is extensively used, as photos show: bottom left, opposite page, cafeteria; below, kindergarten; right, auditorium and gymnasium. Not shown is the daylighted lobby, 31 by 104 ft, which has large glass areas on north and south sides.



PENN VALLEY SCHOOL

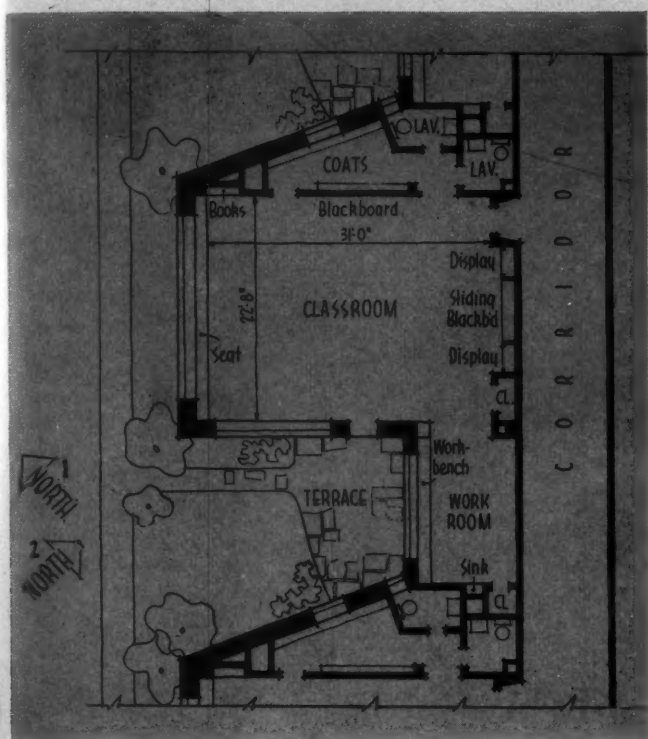
Three photos at right and below show kindergartens. There are two of these, easily accessible from main entrance drive yet protected from traffic



A variety of color in six pastel schemes is used in Penn Valley classrooms, with no two adjacent classrooms alike. A very conscious effort has been made to design the school attractively for children. There is a small pool, deep enough only for sailing toy boats, which receives water from a goose-adorned spout and is surrounded by figures of rabbits and pixies. There is a series of panels, 18 by 24 in., some in leaded glass and some in colored tile set in walls of the small play yards, depicting scenes from Mother Goose, children's books, and historic incidents. These were executed from cartoons by Livingston Smith.

COST DATA

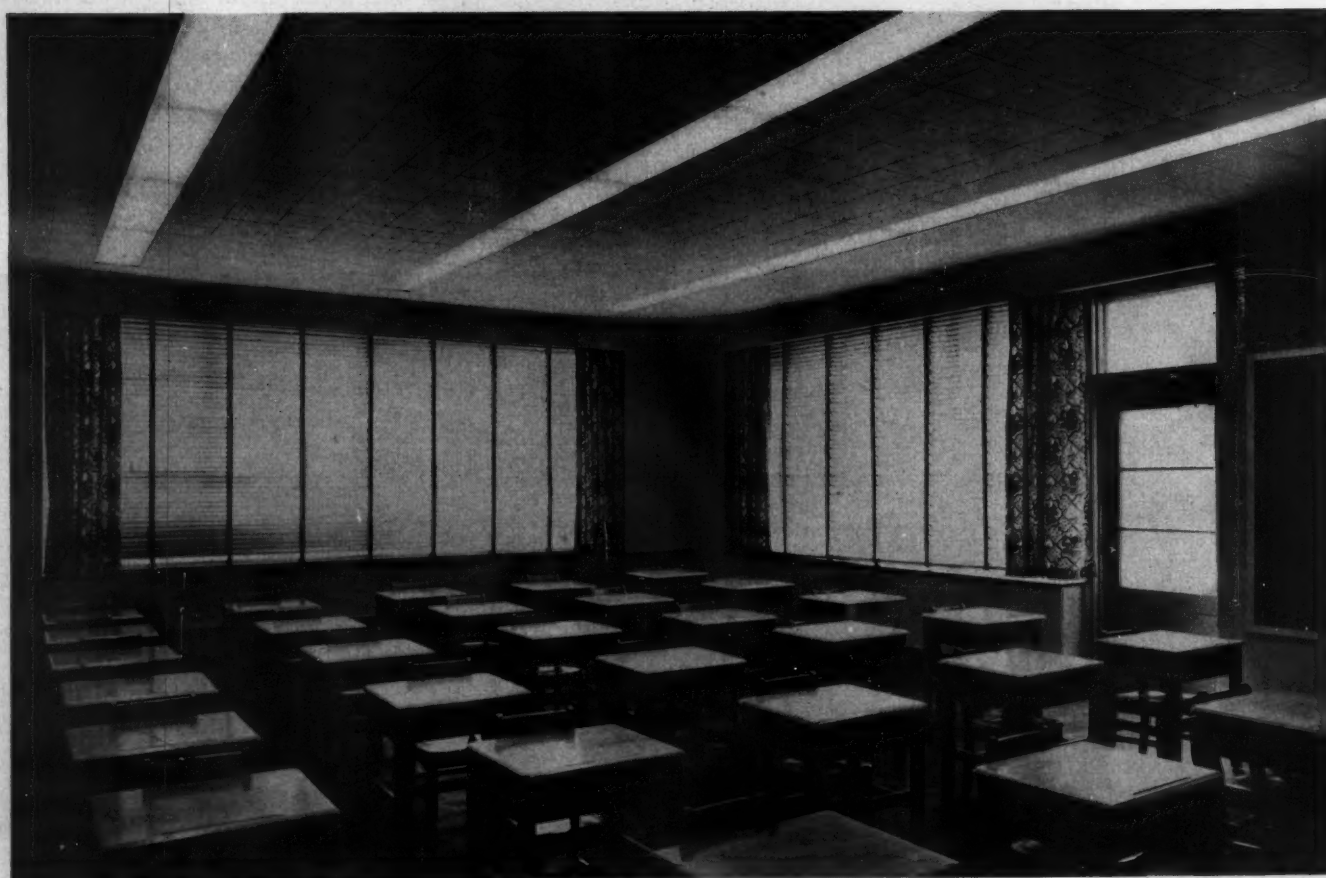
General Construction.....	\$ 947,060	1,646,142 cu ft at \$0.828 per cu ft
Heating, Ventilating.....	137,360	83,696 sq ft at \$16.28 per sq ft
Electrical.....	155,875	550 students at \$2,478.93 per student
Plumbing.....	123,115	Furniture..... \$ 41,359
		Basketball Backstops..... 2,028
Total.....	\$1,363,410	Curtains and Blinds..... 18,544

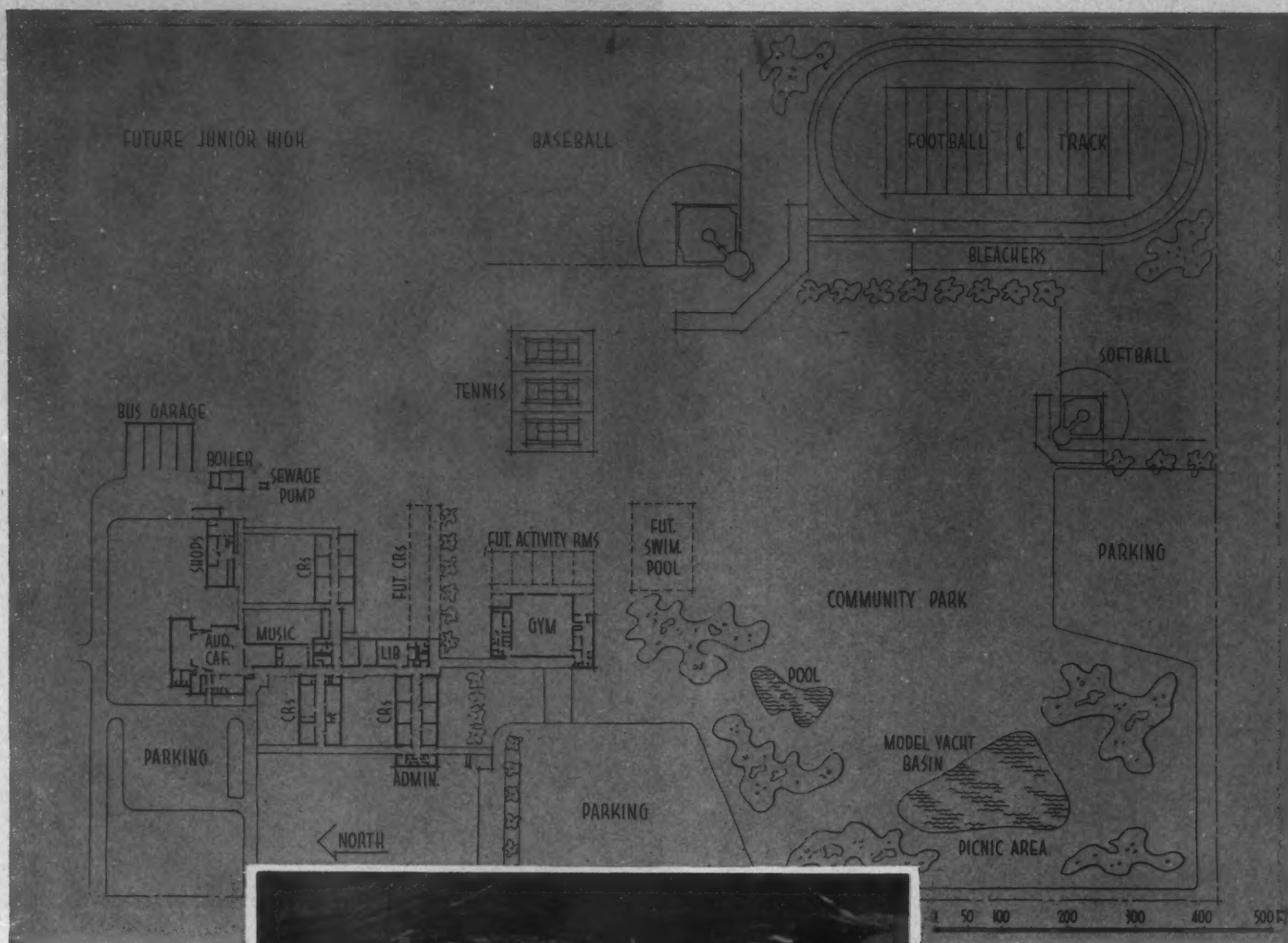


Plan and two photos, this page, show classroom and cloakroom. Essentially the same classroom is used throughout, part oriented with windows south and west, part southwest and southeast

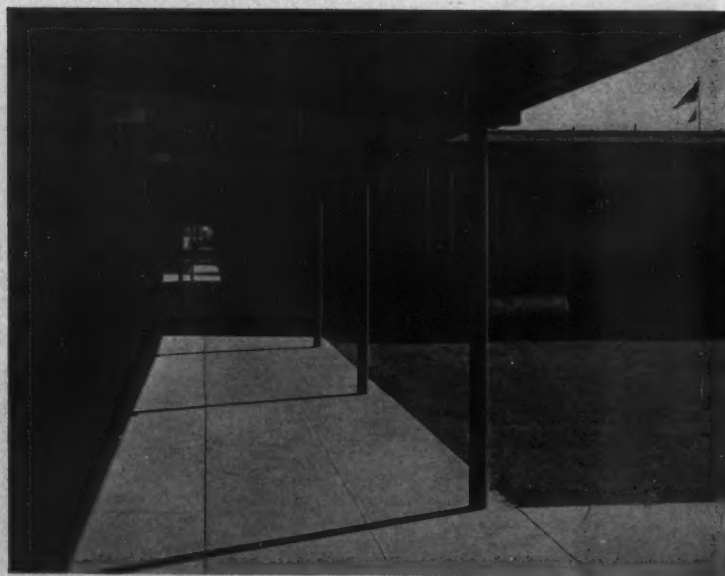
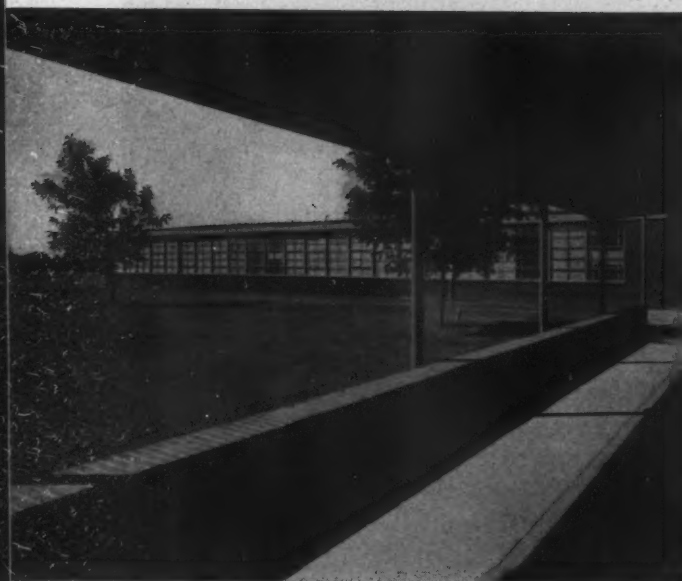


Joseph Molitor Photos





Willamette High School: photos below, left and right, views from library corridor; facing page, facade of library and corridor leading to gymnasium



WILLAMETTE HIGH SCHOOL, LANE COUNTY, OREGON



Carroll C. Collins Photos

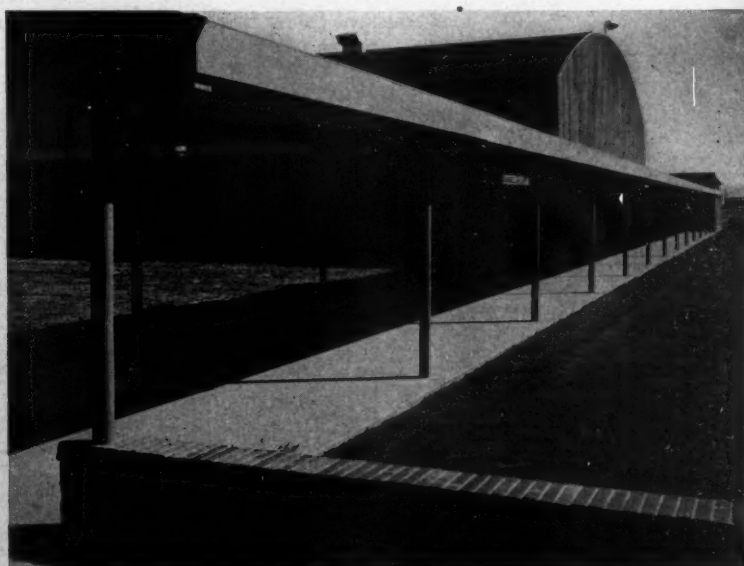
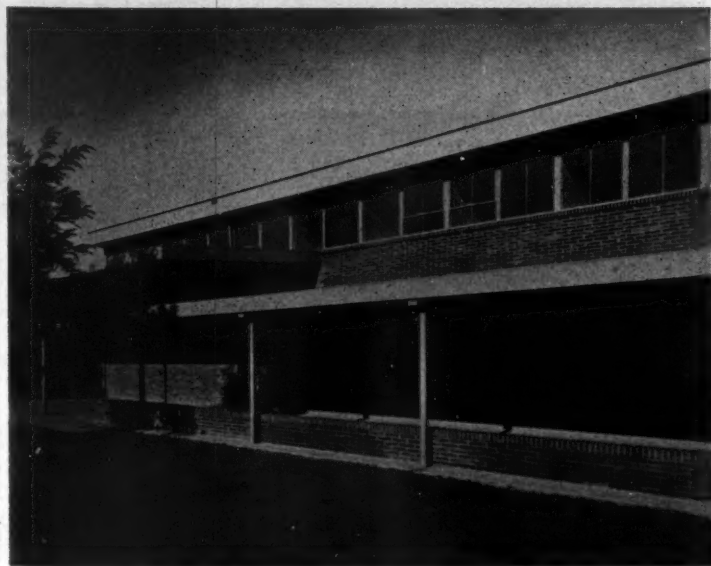
Wilmsen & Endicott, Architects

Myers & White, Mechanical, Electrical Engineers

George Jette, Landscape Architect

THE CONSOLIDATED DISTRICT which this school serves was formed in May 1948 for the express purpose of obtaining a local high school. Soon thereafter a bond issue of approximately \$450,000 was voted, a 50-acre site was purchased, and a new Superintendent, Tom R. Powers, was hired. Mr. Powers says: "At that time the district was so in debt that it was necessary to build economically and at the same time functionally." This was a strict limitation; offsetting it somewhat, says the State Department of Education's School Building Consultant, James L. Turnbull, was the fact that, "being a new set-up, there were no existing facilities to be considered. . . . This was a distinct advantage." The architects, familiar with many schools, were fortunate,

they state, in working with a board and superintendent who conceived a school just large enough to have adequate facilities yet small enough to make of each child an individual ("Too often," says Mr. Wilmsen, "schools are built on the premise that the biggest is the best."). The board recognized that a school is no better than its program and faculty; they recognized also that changes in equipment, teaching methods and surrounding residential areas made it wise to build for a lifetime of only 20 years; and they understood that their building, for children, should not be a monument. However, the grounds, auditorium and gymnasium were designed for use also by adults in the community; the auditorium seats 400, the gymnasium 1200.

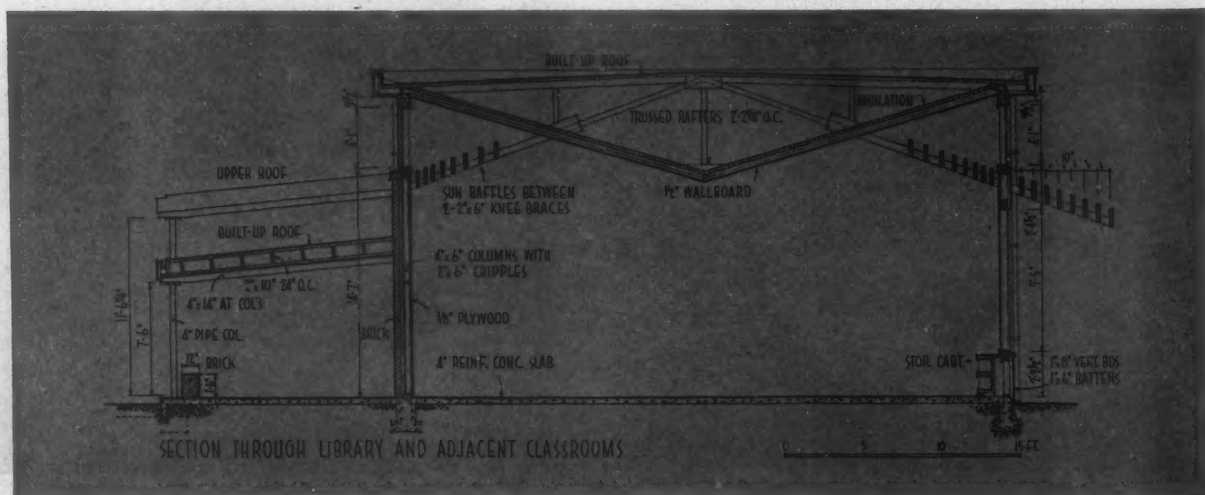


Carroll C. Collins Photos



Photos and drawings on these two pages show the library unit. Buildings were designed for erection in successive stages; plan at right shows unit before auditorium-cafeteria was built; room labelled "Cafeteria" is now a classroom. Later, when another wing is added to the east, Library will be expanded by removing adjoining partitions. Section below shows inverted truss and

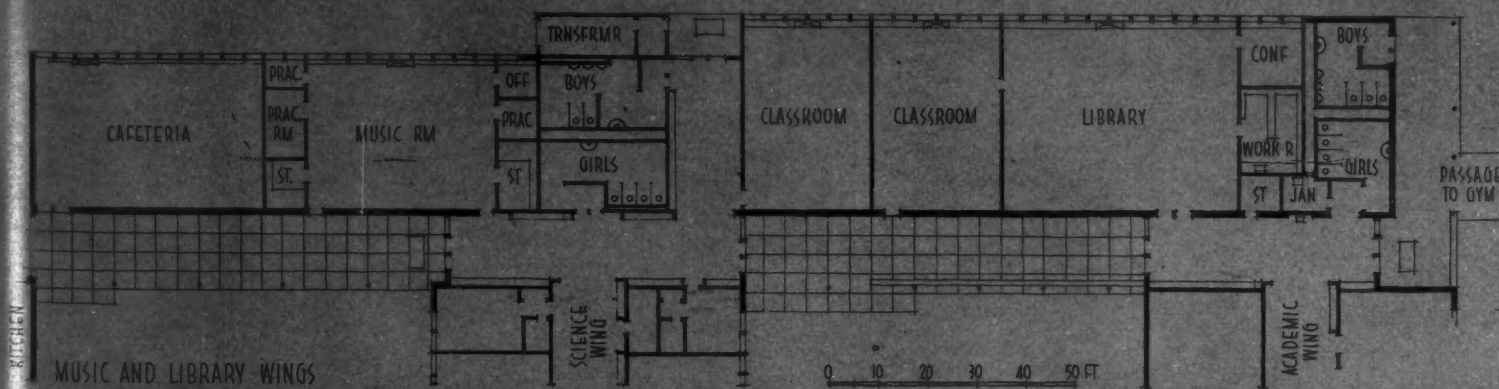
light baffles used to distribute natural light evenly and control glare. Construction is wood throughout, with fir plywood and boards-and-battens extensively used, and some brick veneer. Though the site is flat, its high water table during rainy winter months made mandatory the slab floor set on grade. Roofs are built-up asbestos composition with blanket insulation between joists



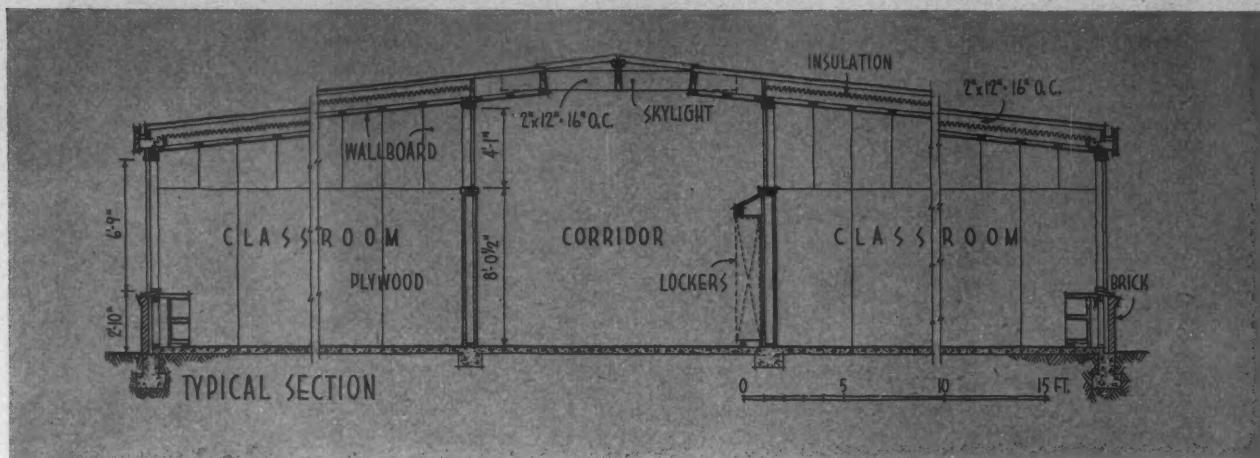


In secondary schools, Wilmsen and Endicott believe, high construction costs are common because classrooms are all "special" rooms; the student moves from specialty to specialty, creating circulation problems. At Willamette High, the campus plan's inside and outside corridors and spaces are designed to handle peak traffic loads yet to remain attractively in human scale when empty. Too, say the architects, a high school student is a lusty animal, a boisterous hot-rod boy who bangs doors, scuffles, scrapes, hangs, and so on. "After re-hanging several wood doors during the first year we concluded that perhaps a high school *should* be built like a jail or asylum!"

This is a 4-year high school, with room on the site for a junior high building when population growth justifies shifting to a 6-3-3 system. It has been built in stages, with principal utilities installed to accommodate anticipated additions. Heating is low pressure steam, piped from a special sawdust-burning plant to all wings via underground pipe trenches. Total cost to date (including mechanical and electrical work but not land, fees or equipment) is \$534,889. For 80,580 sq ft (outdoor covered areas at half area) this comes to the remarkably low figure of \$6.63 per sq ft; for 450 pupils, to \$1188.50 per pupil.



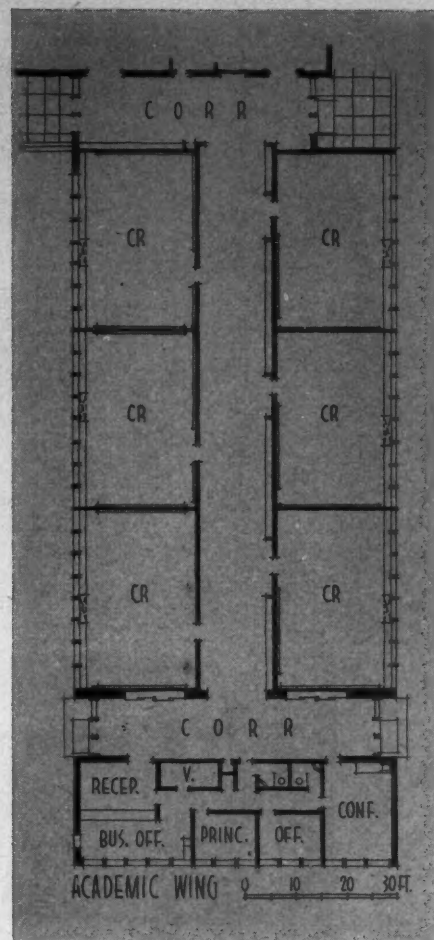
WILLAMETTE HIGH SCHOOL



Section above, photos and plan at left and right, show academic wing with skylighted corridor and borrowed lights in classrooms for bilateral lighting, sloping ceilings to help distribute light. Windows are steel, fixed or commercial projected. Photos below, left, classroom in academic wing, lab in science wing; facing page, room in new east wing with music wing and auditorium seen through window. Noisy or active units (music, auditorium, gym, shops, garage) are isolated from quiet areas

Carroll C. Collins Photos





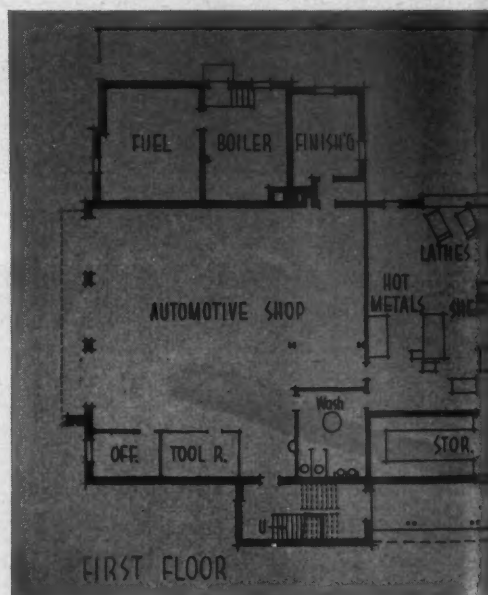


SHOP AND BAND BUILDING GRAINGER HIGH SCHOOL

Kinston, North Carolina

John J. Rowland, Architect

James M. Simpson, Associate



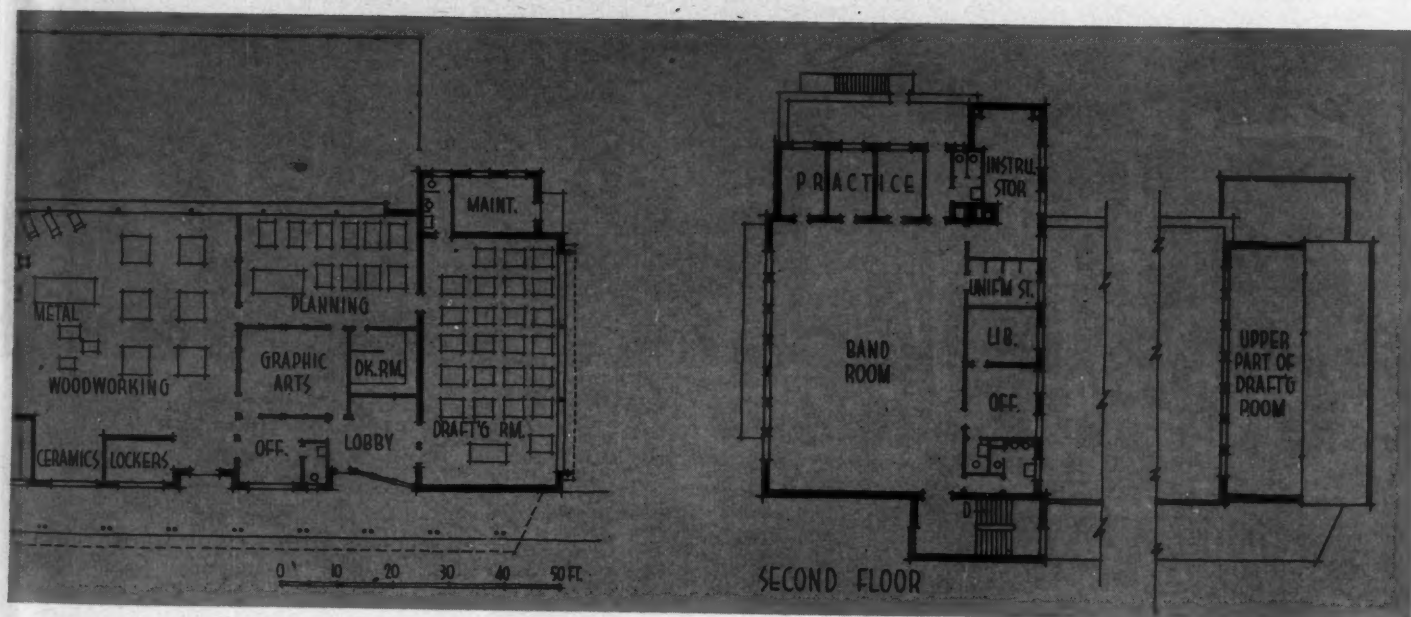
AT FIRST GLANCE it seems strange to find shop work and band practice in the same building. However, both are noisy and both have here been added long after buildings for the initial program were built. It is logical then, that both should be isolated from the quiet areas of the high school; and since the needs arose concurrently, combining them in one structure was logical and economical.

The building is wall-bearing, with concrete block walls (painted on the interior) having exterior surfaces of brick. The roof is of lightweight precast slabs. Windows are steel, of architectural projected type. To help reduce noise, all ceilings are acoustic tile and second-

floor band rooms have additional acoustical treatment.

With the entire first floor devoted to shops and drafting room, it was possible to make the 50-ft-wide main portion a general shop, so laid out that parallel processes are physically closely related. In a shop of this kind, the student initiates a project in the planning room, makes working drawings in the drafting room, makes any forms, etc., which may be needed, and finally executes and finishes the work in an orderly manner, learning the part each type of activity plays in the whole process. Consultant for shop layout was Dr. J. R. Ludington, who has since become Specialist in Industrial Arts for the U. S. Office of Education.

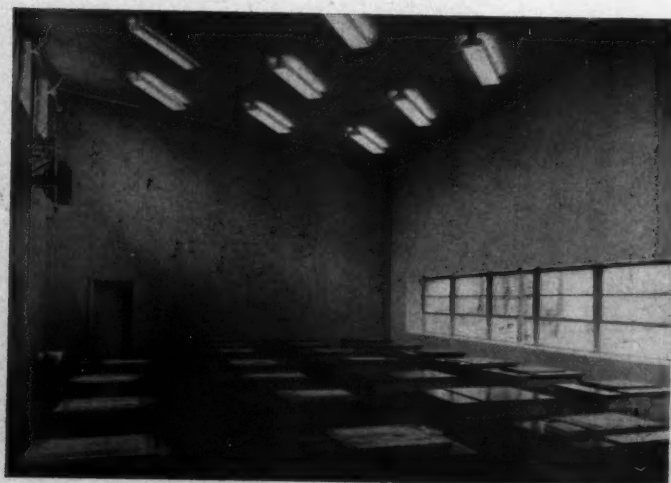
Joseph Mollitor Photos

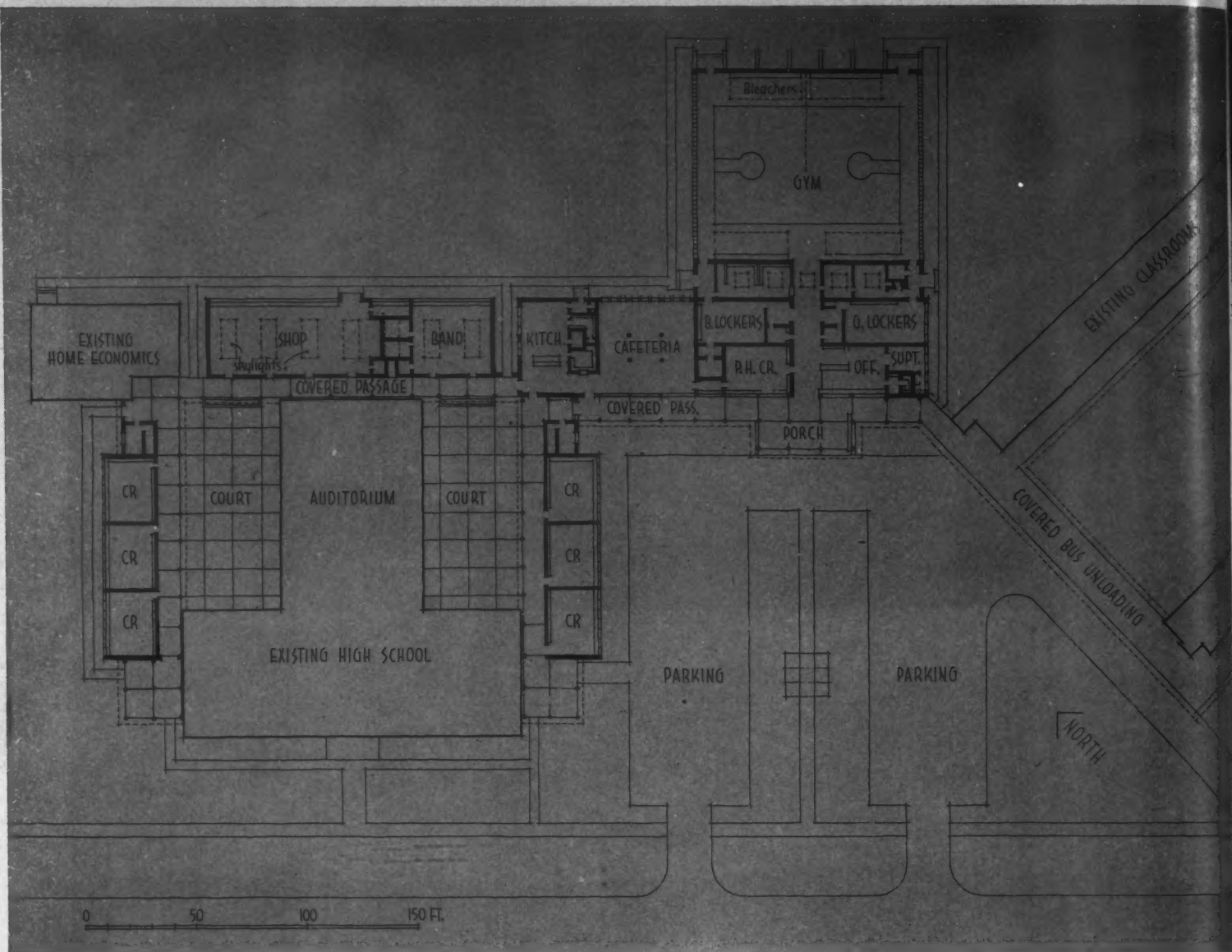


Below, left, Band Room; right, Drafting Room, bilaterally lighted with clerestory windows visible at left



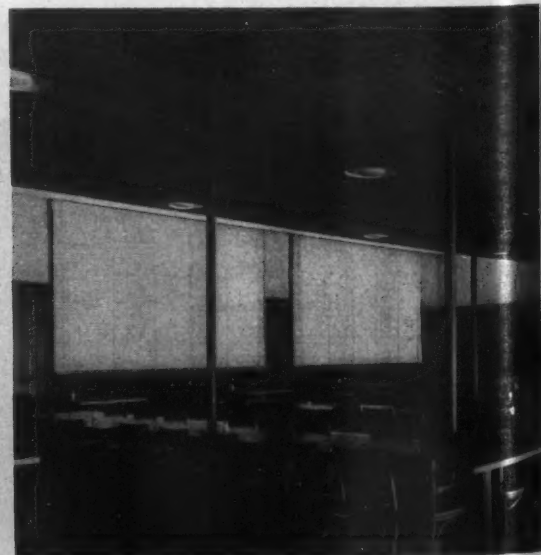
NOVEMBER 1951





New portions of Sweeny High School, shown in heavy line, had to unify buildings designed by two previous architects, the earliest one built under the old PWA school program. Circulation between the uncoordinated existing buildings was

formerly haphazard, often muddy underfoot. Photo below shows covered passage which now unites buildings; center, interior of cafeteria; right, new classroom. In 1950 the school won a regional A.I.A. award



Donald Barthelme & Associates, Architects

Walter P. Moore, Structural Engineer

Taylor Milton, Electrical and Mechanical Engineer



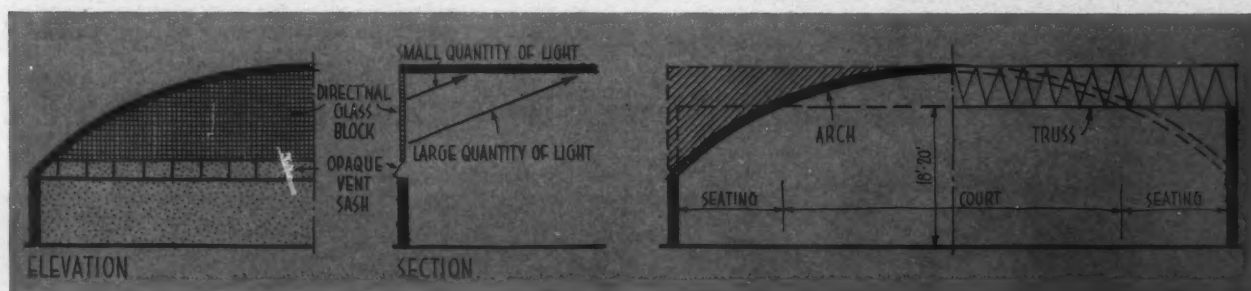
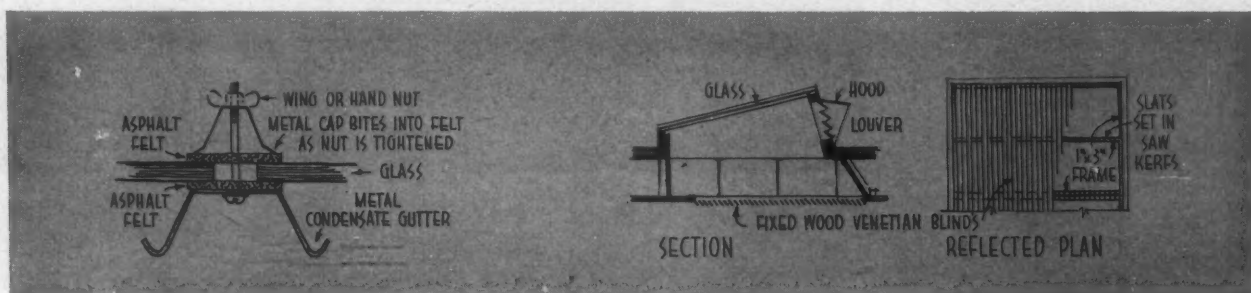
EXPANDED HIGH SCHOOL

SWEENEY INDEPENDENT SCHOOL DISTRICT, TEXAS





Photo and detail show method of skylighting used here by architects in shop and band wing, and applied also in other schools from their office. Slat louvers shown are mounted in a simple wood frame and so oriented that north light is not interrupted. Interior lighting is even, quite high level, has suited school authorities. Vent is needed to exhaust heated air at some seasons. Puttyless skylights are insisted upon; careful checking, supervision and inspection have resulted in no leaks over 7 years' use



Gymnasium construction: comparison at right shows reason for selecting arch form (reduced cubage with height concentrated where needed). Section and elevation at left show how directional glass block at ends are employed to distribute daylight deep into interior



SWEENEY HIGH SCHOOL

The lack of overall planning visible in the disunified buildings existing when this expansion program was started (see plan, preceding page) has many counterparts among this country's school systems. In this case, at the time more space was needed it was also tacitly understood that the buildings needed unifying, and that the additions must at the same time capitalize on recent advances in school design yet not render obsolete the existing facilities. By 1950, 7th to 12th grade students have gained paved, covered passages and a large paved forecourt for bus loading; around this the buildings group naturally. Added classrooms were placed alongside the high school proper, creating paved courts which insure permanent natural lighting. The sunny, wind-protected play spaces are an extra dividend. The new shop and band building connects the new wings, locating these facilities where they may

be used in connection with the future auditorium. The old shop, now the cafeteria, fronts on the forecourt. Locating the gymnasium on axis of the forecourt provides parking for basketball games and for the public using the cafeteria and administrative facilities. These spaces separate somewhat the upper and lower high school ages, yet make available to both facilities used in common. Classrooms are lighted with directional glass block with high windows over room storage lockers on the opposite side for cross ventilation. Artificial lighting is from troffers recessed in acoustic tile ceilings. Shop and band building was designed for eventual division into several classrooms by inserting partitions. The gymnasium has a wood lamella arch roof which spans 85 ft with 2 by 12 in. members.

COMPLETE SCHOOL PLANT FOR CULVER CITY, CALIF.

Culver City Unified School District

Daniel, Mann, Johnson & Mendenhall, Architects

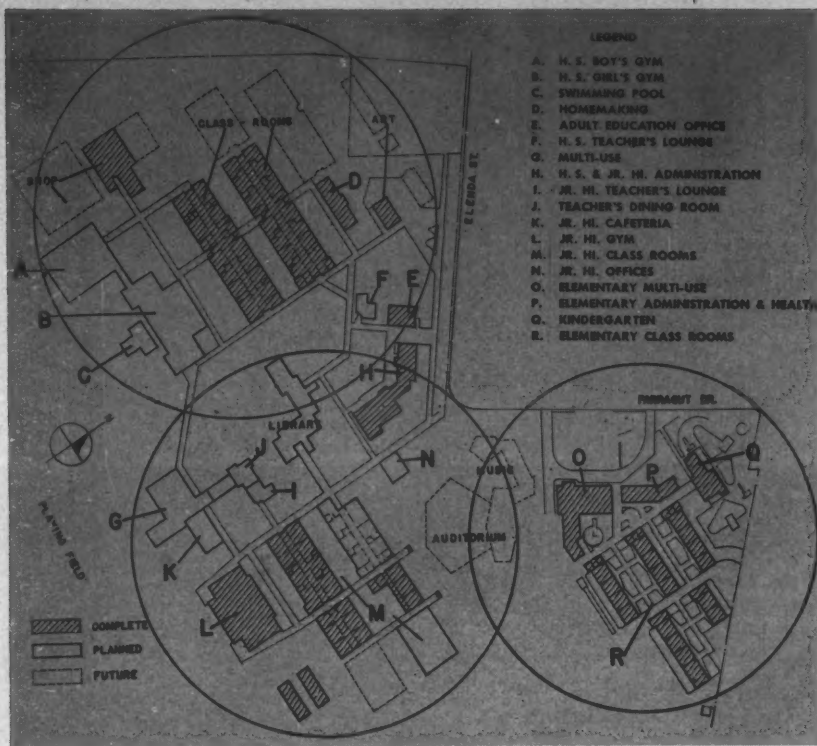
Foster Sampson, Electrical Engineer

Chester D. Walz, Mechanical Engineer



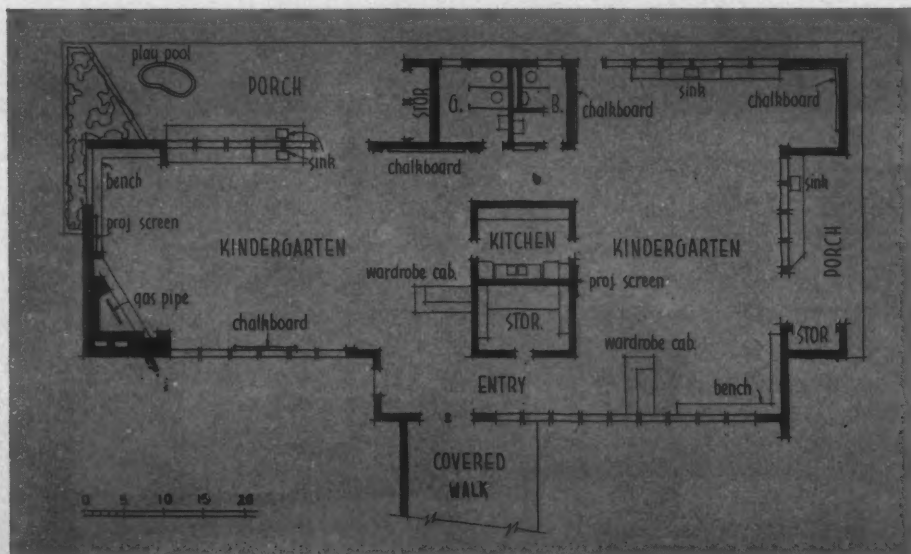
Donald J. Higgins Photo

This complete school plant consists of the Farragut Drive Elementary School, a Junior High and a Senior High School. All are carefully organized on one large site so that there is a minimum of interference of age groups. A campus type of arrangement, with the necessarily extensive facilities broken down into small units, does its part in bringing the buildings into child-scale. Above is a much-used outdoor classroom in Farragut Elementary, set up to recreate facilities the children found on a visit to Los Angeles Harbor



CULVER CITY SCHOOLS: FARRAGUT ELEMENTARY

THIS CULVER CITY SCHOOL PLANT provides, on one site, facilities for every grade from kindergarten through Senior High School. It could have been built — and would have, not so long ago — as one or two monstrous buildings; actually it has been designed as a series of small, one-story units placed campus-fashion to form three school groups: Farragut Elementary, Junior High and Senior High. It is still being expanded in accordance with the master development plan shown above. To avoid duplication of some facilities, buildings which can serve two of the schools are placed conveniently to both. In Farragut Elementary, construction is concrete and wood, with concrete slab floors surfaced with asphalt tile and containing radiant heating panels. Each classroom has its adjoining outdoor classroom, shown on the preceding page.



Elementary buildings are generally smaller than Junior and Senior High buildings on the Culver City School campus; classroom buildings are one room deep with outside corridors. Typical room, nearly square, is shown in plan on facing page. Photos, top row, left to right: exterior, two elementary classroom wings; interior, administration reception office; typical classroom

Donald J. Higgins Photo

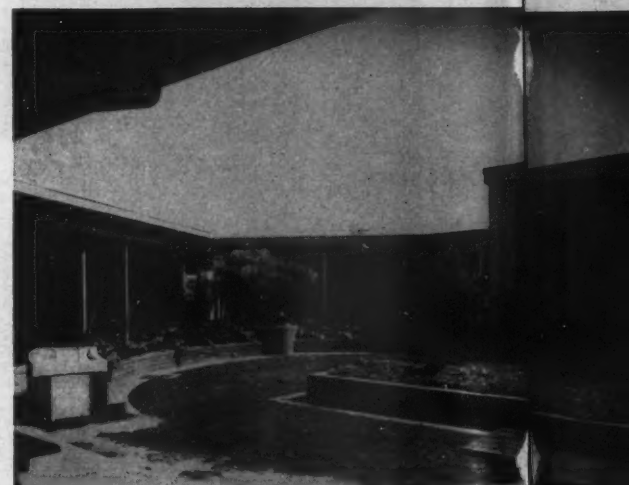
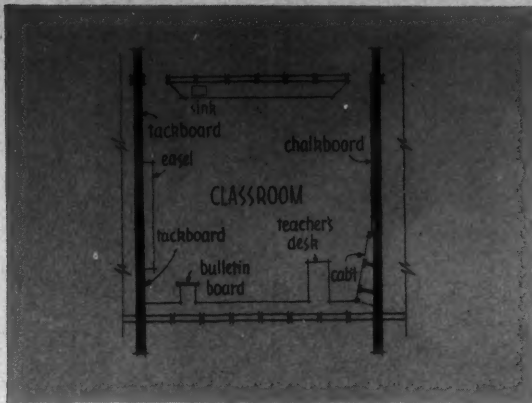


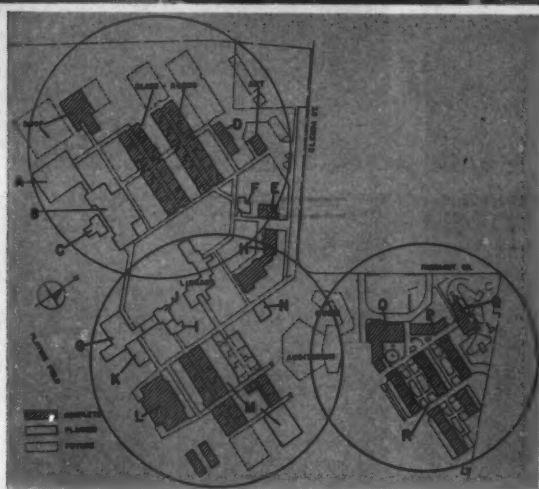
Photo above: outdoor luncheon area, kitchen in Multi-Purpose Building (see plot plan) at right; this building serves either as indoor cafeteria or auditorium. Plan at left and three photos at bottom of facing page show Kindergarten. Fence screens kindergarten playground; bottom photo shows "runaround house" on which small children can play imaginatively and let off steam. Note that kindergarten, with furnishings and building scaled down to child size, has roofed, open porches designed for active use

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William H. Olson Photo



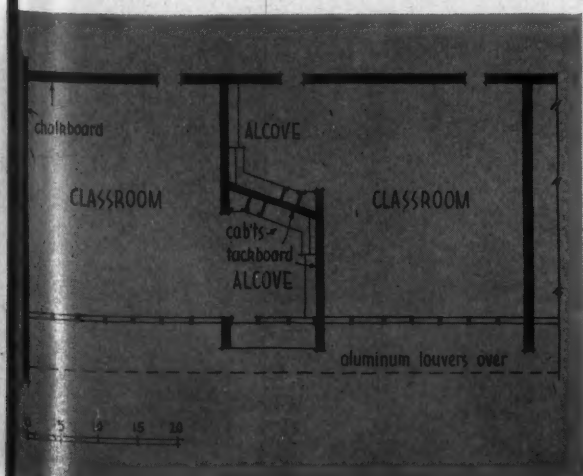


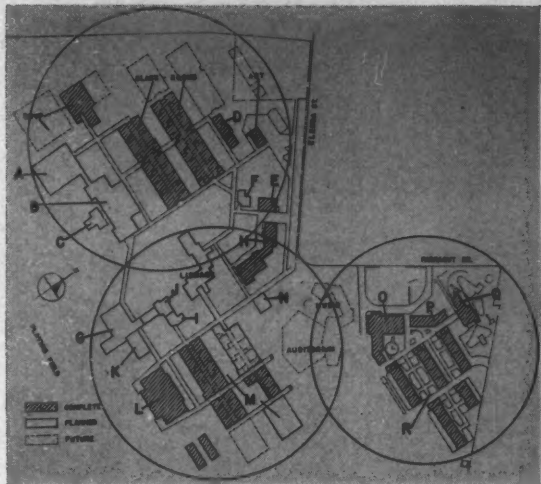
CULVER CITY UNIFIED SCHOOL DISTRICT: JUNIOR AND SENIOR HIGH SCHOOLS. Above, looking from joint Administration Building (H on plot plan) toward Senior High Classroom Buildings. The concrete and steel-framed buildings, disposed on the site in a campus arrangement designed to maintain a human rather than a monumental scale, are connected by numerous covered walks. These help to unify the buildings, and with them define a number of variously proportioned courts which, when planting has had a chance to soften and blend them, ought to heighten the pleasant informality of the vast school. Below is a typical Junior High classroom, whose plan is on facing page. Details of skylighting, etc., are like those of Senior High rooms shown on following pages





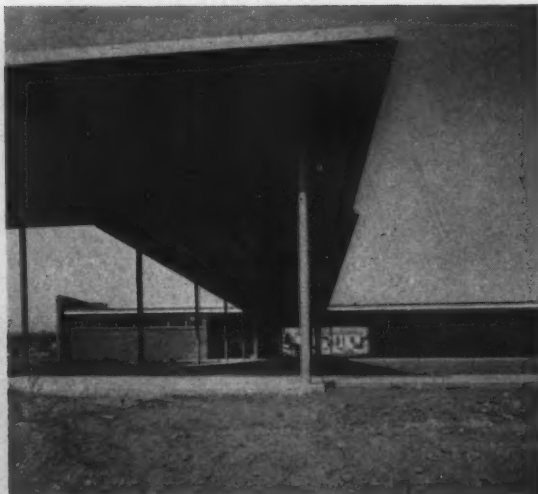
Above, corridor, Junior High, skylighted through a diffusing ceiling grid. Right, three Junior High facilities. Top to bottom: gymnasium with folding door to divide it into boys' and girls' areas; exterior of gymnasium showing hard-surfaced outdoor sports area; home economics classroom, fully equipped. Junior High requires rooms of two types; for certain studies, classrooms reminiscent of those in upper elementary grades; for others, specialized rooms which anticipate the more complete specialization of High School provisions. Thus the buildings facilitate the transition from an elementary to a secondary school





CULVER CITY UNIFIED SCHOOL: HIGH SCHOOL

Above is the High School shop building; below are four views of the Administration Building which serves both Junior and Senior High Schools (building H on plot plan). From left to right: main entrance from Elenda St.; covered walkway connecting with Senior High classroom buildings; attendance office (one side for pupils from grades 7 through 9, the other, 10 through 12); and individual counseling rooms



Three photos at right show classrooms in Culver City Senior High School, typical of the specialized provisions for an advanced secondary program. Top to bottom: arts and crafts room; laboratory classroom; shop. Construction is concrete and steel, with concrete exposed inside and out. Roof is built-up and has a reflective surface; interior partitions are plywood, plaster and redwood; floors are concrete slabs on grade with asphalt tile. Windows are steel, glass wool insulation is used, and heat is supplied by radiant floor panels. Note particularly the completeness of equipment in all rooms; the acoustic tile ceilings, incandescent lighting, and germicidal lamps. Classrooms, nearly square and flanking double-loaded corridors, have skylights to daylight interior areas; these, which also light corridors, are glazed with heat-absorbing glass and equipped with aluminum diffusing grids at ceiling



In the background workers are placing window sash and reinforcing mesh in casting beds before the first layer of concrete is poured. In the foreground a form is being mopped with a plastic to prevent sticking



After the first layer of concrete is poured and vibrated, workers screed it. Note lifting hooks, lower left



Blocks of cellular glass insulation and then wire mesh have been laid over the bottom thickness of concrete prior to pouring final layer. Wire shear ties show at left in left form



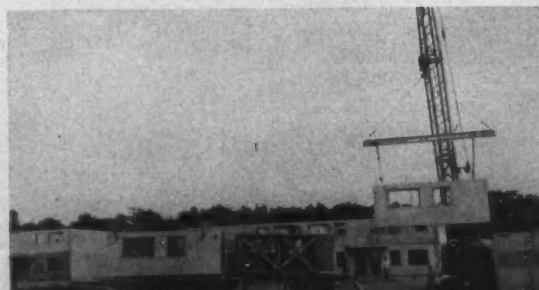
Exterior is brushed to give a texture in contrast to smooth, trowelled areas surrounding the steel sash



Lifting mat develops enough vacuum in 3 min. for the crane to pick up slab and place it on a truck



At the site a crane lifts the wall slab from the truck and sets it in place



MASS-PRODUCED

Shaw, Metz & Dolio, Architects

Corbetta-Price Company, Inc., Builders

ONE THOUSAND DWELLING units enclosed in the 318 one-, two-, and four-family buildings of precast concrete which will comprise Forrester Village are being constructed along modern mass production lines. One of the outstanding features is the use of load-bearing, prefabricated concrete wall slabs having an insulating core of cellular glass.

Eight rows of casting beds 300 ft long mark the site where the wall units are fabricated. A visit to the site usually reveals: (a) four rows of beds where assembled wall units are curing for their standard two day period, (b) a row in which units are being assembled, (c) a row of beds where finished wall units are being lifted and hoisted on waiting trucks, and (d) a row where workmen are scraping the casting forms clean for use the following day. Some of the remaining casting beds are used in the fabrication of non-insulated concrete party walls which separate apartments in the dwelling units, while in other beds the formwork is being repaired.

Each bed is capable of being adapted to produce any one of ten different building types. Thus, on successive re-uses of the same row, there may be 17 wall units of one type of dwelling as against 26 units of another type. The maximum area which any two rows (one day's work) can accommodate is about 5700 sq ft, with the grand average being close to 4200 sq ft of walls per day.

The Casting Bed

The base of the casting bed is concrete with wood 2 by 4's imbedded for nailing strips. Sheets of finished plywood are laid over the concrete and nailed to the 2 by 4's. The plywood serves to give a smooth finish to the interior veneer of concrete. The edge forms of the casting beds are precast concrete members anchored to the base. The casting bed rows are 300 ft long and 10 ft wide. The wall units cast in one bed are enough to enclose the largest building being used in the housing project.

D WALLS IN NAVY HOUSING

Forrestal Village

Great Lakes Naval Training Station

Upton, Illinois



The completed shell of this four-family unit consists of the prefabricated wall slabs and hollow core roof and floor slabs. Note ends of floor slabs where canopies will go

Casting The Wall Units

The 8-in. prefabricated wall slabs consist of a 2½ in. exterior veneer of reinforced concrete, a core of 1½ in. cellular glass insulation, and a 4 in. interior veneer of reinforced concrete. The interior face of the panel is smooth and can be painted to achieve a decorative effect. The exterior face of the panel is given a brush treatment which offers a rough texture, and designs are formed on

certain panels with a relief mold. The core acts as both insulant and vapor barrier. The U value of the wall units is .198.

The first step in preparing a bed for casting is to scrape and sweep away any concrete left sticking to forms from the previous pour. The bed is then given a mop coating of a liquid parting agent, which prevents the concrete from sticking. Following this, the steel windows, door frames, kitchen fans, and welding

Construction process is apparent here. Tie bars support walls until lugs in wall slabs are welded together and also to lugs in the hollow core slabs. Joints are then caulked. Hollow cores in slabs serve as passages for warm air heating



plates, lifting hooks and precut sheets of reinforcing mesh are set in place. The welding plates are used to tie adjoining wall sections together and to tie wall sections to roof and floor slabs. The lifting hooks provide a means of lifting the wall sections by crane to set them in position at the building site.

Next, a layer of concrete is poured in the casting bed. This 4-in. thick layer of concrete forms the interior wall of the unit. The concrete is screeded and vibrated to facilitate placement of the rather stiff mix. Workers lay 12 by 18 in. blocks of cellular glass over the concrete. Between the rows of glass insulation, shear ties consisting of strips of welded wire mesh 4 in. wide and in convenient lengths are inserted in the fresh concrete in an upright position perpendicular to the long side of the wall units. Then another layer of reinforcing mesh is laid down over the insulation, resting on the shear ties which serve to tie together the two veneers of concrete. The exterior concrete is then poured over this assembly in a 2½ in. thickness. This last layer of concrete is vibrated to facilitate placement and to increase the density of the exterior veneer. The concrete surface is then screeded and "floated" and given a broom finish to create a ripple-like texture. After the surface is textured, the casting bed is covered with a sheet of waterproof paper, and the panels are allowed to cure for two days.

Erecting The Wall Units

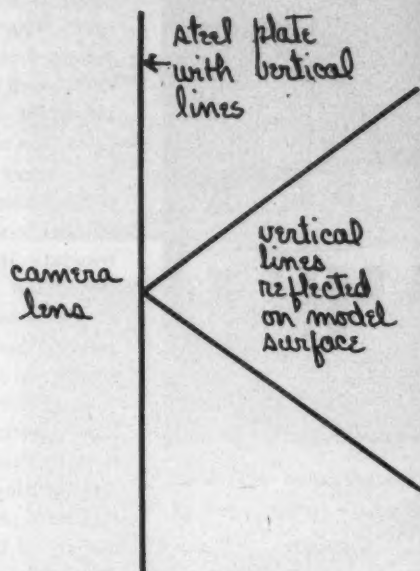
It takes about 11 minutes for two wall units to be lifted from the casting bed onto "A" racks on a truck, which hauls them about a quarter of a mile to the erection site. First a crane lowers a vacuum mat over a wall unit. When sufficient vacuum has been created and the mat has a firm grip on the panel, the crane raises it and tilts it in mid-air to a vertical position and lowers it in place on the truck. The same procedure is followed in lifting the adjacent wall unit, and the truck drives to the erection site with two wall sections that may enclose upwards of 400 sq ft.

At the erection site, a large crane lowers its lifting beam, workmen secure hooks in the lifting hooks, and the unit is swung over the floor slabs. The panel is bolted temporarily in place with braces, which support it until the four walls of the dwelling have been welded together. The installation of the walls is completed with the caulking of all joints.

STRESS ANALYSIS METHOD FOR CONCRETE SLABS

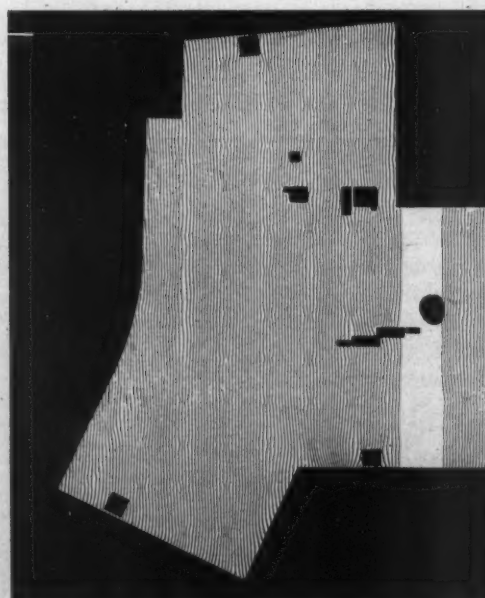
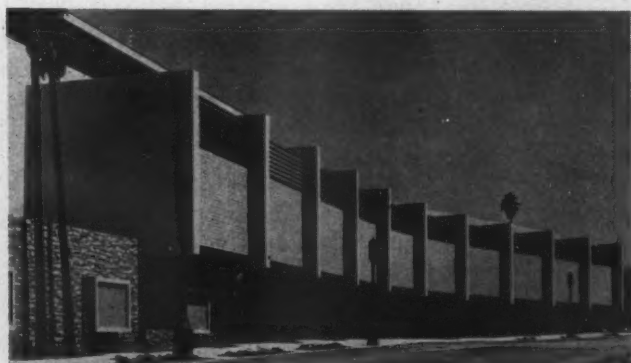
Based on optic principles combined with photography, it determines bending of plastic models under load

STAGE 1



1. A model is built of plastic to scale. Rubber bags are fitted to each bay and connected to an air manifold. The floor slab then is fastened to the model and given a mirrored finish. 2. The model is placed in a frame, facing a grid of vertical lines in the center of which is a camera. 3. The slab is loaded, and the photograph shows the lines distorted where bending has occurred, the model slab surface acting like a fun house mirror

Below: Bullock's Westwood department store in Los Angeles as finished. Savings in reinforcing alone were said to be \$30,000



IN buildings framed with reinforced concrete, architects select flat slab construction* when they want to eliminate beams and girders or joists so as to give more headroom and to obtain minimum interference with layout.

But engineers run up against tough problems in analyzing the stresses which determine how much reinforcing steel is required. Mathematical analysis of flat slabs is tedious and complex, and generally is a practical impossibility when the column spacing is irregular.

So, until recently, engineers had to rely to a great extent on empirical formulas—based on tests, judgment and mathematics—which are acceptable to building codes. This meant that more reinforcing steel was used than absolutely necessary because designs based on these formulas are usually on the conservative side.

When the structural engineering firm of Bowen, Rule and Bowen was asked to do the structural design on the Parklabrea Housing Project in Los Angeles in 1948, they developed a new method of flat slab stress analysis out of neces-

sity. The eighteen, 13-story apartment buildings, designed by Leonard Shultze, called for flat plate design with very irregular column spacing, the under side of the slab forming the ceiling of the room below. This project was so large, and the design so complicated, that it warranted investigation into the use of a test model on which loads could be simulated and their effect measured.

The engineers consulted with Professor R. R. Martel, head of structural engineering at California Institute of Technology, and then proceeded to develop a method called *Presan*, the name derived from the initial letters of the full name "Photo Reflective Stress Analysis." The method is based on the measurement by optics combined with photography of the surface curvatures of a plastic model under load. From these curvatures, bending stresses are determined.

Applications And Advantages

So far, *Presan* has been used to analyze flat plate and some other flat slab systems. It is a method which permits any column arrangement or location of openings without complicating the structural design or requiring expensive framing. Architects can place columns as desired for optimum space usage without

the usual penalty of increased costs.

Following the Parklabrea job, the engineers sold their rights to the newly formed Presan Corporation, with Gerald Bowen as president and active member of the company, and to whom belongs the lion's share of the credit for developing the method. This company now performs the structural analyses for other engineers.

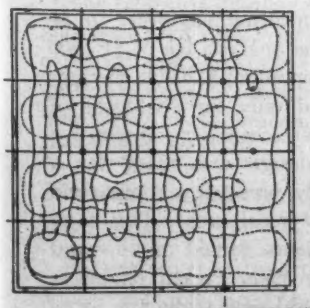
According to Bowen, a flat slab or flat plate floor system can be designed to use far less steel than any other floor system, excepting pan joist construction in a few isolated cases. The saving in steel over the closest type of competitive structure, using the same quantity of concrete, exceeds 30 per cent. Normally, it proves more economical to reduce concrete, maintaining steel at about the same weight per sq ft as in a conventional analysis. During the steel shortage, however, the structure can be designed to reduce steel tonnage as indicated above.

Further advantages are said to be (1) more than 30 per cent steel saving if bays are rectangular or irregular, (2) a further decrease in steel and concrete if "haunched slabs" are used (see photos, page 182), and (3) reduction in footing loads when haunched slabs are used.

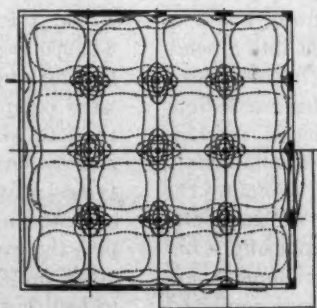
* Flat slab construction means reinforced concrete floors which are self-supporting. Conventional flat slabs require capitals and drop panels, but in flat plate design the columns can be uniform in section from top to bottom.

STAGE 2

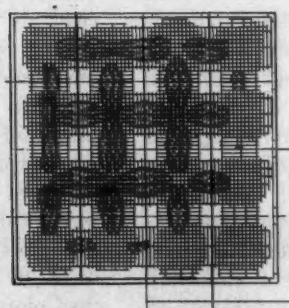
The photograph shows the degree of slab bending and whether it has bent up or down, but some means is needed to measure the distortion of the lines and translate this into bending moment values. The photo is placed in the machine at right and is scanned by the operator, who moves a pointer which controls a ruling pen. From the graph that is thus drawn, data can be taken to plot bending moment contour lines as shown below. These contours form the outline for the engineer to lay out the reinforcing steel



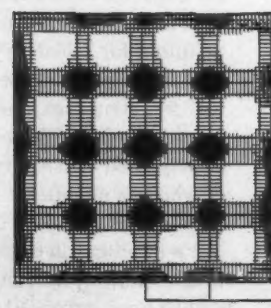
POSITIVE BENDING



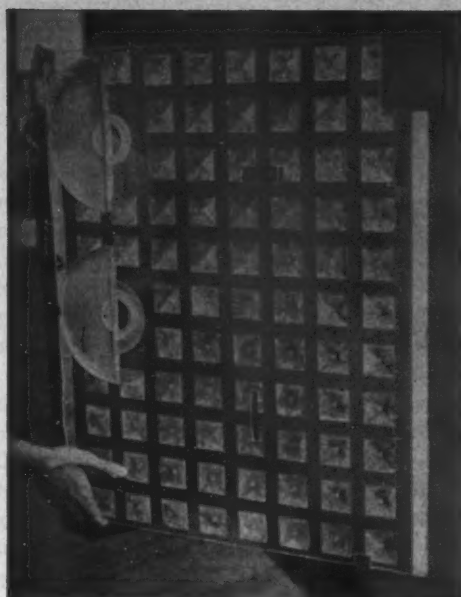
NEGATIVE BENDING



POSITIVE REINFORCING



NEGATIVE REINFORCING



Garage model. Note sections through ramps

Another structure which has been designed with the new stress analysis method is the Pershing Square Garage in Los Angeles. Stiles Clements, Associated Architects and Engineers; City Park Garage, Inc., Builders. The garage utilizes a new floor shape called the "haunched slab." The slab tapers from 5½ in. at one-third of the slab to 16½ in. at the edge of the column



How Presan Works

First, a model is constructed of Lucite which is to scale in plan and to scale stiffness-wise in the relation of the floor slab to the supporting structure. Rubber air bags are modeled and fitted to each bay, and each bag is connected to an air manifold for selective loading. The floor slab is then mirrorized and secured to the sub-structure. Next, the model is placed in a frame facing a vertical grid of lines scribed on a steel plate in the center of which is a camera.

Since the grid used is of uniform spacing, a photograph of the unloaded model would show a reflection of uniformly spaced lines, provided the model surface were absolutely flat. Any distortion from

a flat surface will distort the grid in the photograph. On page 180 is the distorted pattern of grid lines which resulted from photographing the model of a department store under uniform load. It is necessary to measure each grid space successively and very accurately, and to convert each measurement into a bending moment. To accomplish these measurements and corresponding calculations practically, a data reduction machine was developed, which simultaneously measures the line spacing, computes the reciprocal of the radius of curvature, and plots the results graphically. Contours of equal bending moment are then plotted. These contours, combined with a floor plan, can be used by the

engineer for working drawings to delineate the reinforcing bars.

Recent Structures

Bullock's new department store in Westwood Village, California, by Welton Becket and Associates, is the first store to have utilized the method, with a claimed savings of \$30,000 in reinforcing steel and framing costs. Murray Erick was the structural engineer.

Now under construction is the Pershing Square Garage in Los Angeles, Stiles Clements, Associated Architects and Engineers. This structure utilizes a new floor shape, which the Presan people say only can be designed practically by their method. This is known as the "haunched slab."

Gross savings over conventional flat slab design due to reduction in reinforcing steel, concrete, forming and excavation were estimated by Murray Erick, the consulting engineer, to be \$43,000 less the analysis fee of \$15,000 leaving a net saving of \$28,000. Savings were computed only for six-tenths of the total slab area, since a comparative conventional design was made for a typical bay only, preventing comparison over the non-typical areas. This fact, plus the experience gained on this and other projects, leads Presan engineers to feel they could now triple the gross savings indicated above.



INTERIOR APPLICATIONS OF PLYWOOD

A technical discussion of plywood characteristics, installation and finishes. Reference data appears in the Time-Saver Standards beginning on page 187

By Frederick F. Wangaard

Associate Professor of Forest Products, Yale University

LONG before the term "plywood" came into being, 18th century European contemporaries of Thomas Sheraton were gluing up cabinet panels of three layers of wood "the middle pieces being laid with the grain across, and the other two lengthwise of the panel to prevent its warping."¹ A United States patent issued to John Mayo in 1868 reveals a surprising comprehension of the properties of plywood.²

Many developments in the art of veneer cutting, in the formulation of adhesives, in the fabrication of plywood panels, and in the application of plywood to thousands of uses have occurred since John Mayo's description of plywood was written.

The following discussion is concerned specifically with the types and grades of softwood and hardwood plywood as currently manufactured to meet the requirements of Commercial Standards³ for interior use.

Physical and Mechanical Properties

Shrinkage

Natural wood is characterized by generally favorable strength-to-weight ra-

¹ Numbers refer to bibliography listings.

tios in the direction parallel to its grain, but is much less strong and stiff perpendicular to the grain. Similarly, wood is highly stable in dimension in the longitudinal direction when subjected to moisture content changes, whereas its frequently objectionable shrinkage and swelling across the grain are well known.

As a consequence of its cross-ply construction, plywood shrinks and swells far less in width than does solid wood. For the same reason, however, its lengthwise shrinkage and swelling are somewhat greater than for solid wood.

In many parts of the United States, the moisture content of interior woodwork fluctuates from 6 per cent in winter to 12 per cent in summer. Consequently, under such conditions, solid wood shrinks or swells approximately .04 per cent longitudinally, 2 per cent tangentially (parallel to the growth rings), and 1½ per cent radially (perpendicular to the growth rings). Specific values, of course, differ for individual kinds of wood. Shrinkage values for individual American woods are presented in several government bulletins and other publications.⁴

In terms of a 4 by 8-ft panel subjected

to a seasonal variation in moisture content from 12 to 6 per cent, solid wood of a species having total shrinkage values of 7.2 per cent and 0.12 per cent, across and along the grain respectively, would shrink 0.82 in. in width and .03 in. in length.

In contrast, a 3-ply plywood panel of uniform ply thickness would shrink only .08 in. in width, while its lengthwise shrinkage would be .10 in. Plywood is thus seen to shrink only 1/10 as much as solid wood in width.

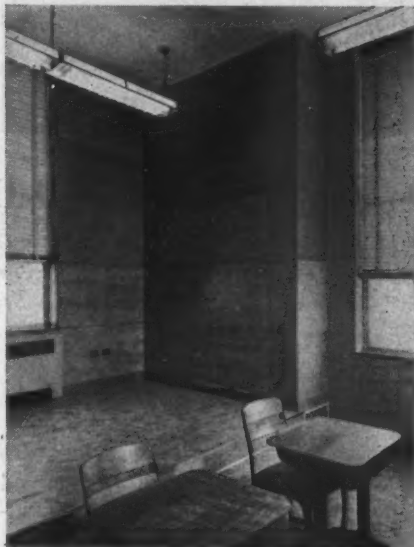
The conventional odd-ply construction of plywood is necessary to obtain balanced construction to retain a warp-free panel under various moisture conditions. Balanced construction simply refers to symmetry of construction about the core ply so that corresponding plies on either side of the core are alike with respect to species, type of veneer (rotary-cut vs. quarter-sliced, etc.), direction of grain, thickness, and moisture content at the time of manufacture.

In practice, limited departures from these listed requirements of balanced construction are sometimes permitted, particularly with reference to a difference between species employed for face

Courtesy Douglas Fir Plywood Association



Above: grain in scored Douglas fir plywood panels has been softened with a wipe finish of white paint. Below: birch, an economical architectural plywood, was used by architect Emilio Di Rienzo in this music room



Ben Schnell Photo; Courtesy U. S. Plywood Association

and back plies in decorative panels, but the production of warp-free plywood requires recognition of the principle of balanced construction.

Strength

The importance of the distribution of strength properties afforded by the cross-ply is appreciated when it is understood that the tensile strength of solid wood is 25-60 times as great parallel to the grain as across the grain. In compression, solid wood is 3-10 times stronger parallel to the grain than it is perpendicular to the grain. Stiffness is 12-20 or more times as high in the grain direction as opposed to that in the transverse direction.

Furthermore, solid wood is characterized by relatively low resistance to shear parallel to the grain, and shear strength of plywood is considerably enhanced as a result of its cross-ply construction.

The tendency of solid wood to split along the grain at mechanical fastenings placed close to edges or ends of a piece, or to check or split as a result of seasoning stresses, is also greatly reduced in plywood as a consequence of the resistance afforded by the firmly bonded cross plies. Page 187 of the Time-Saver Standards contains approximate methods of calculating strength and stiffness of plywood.

Types of Interior Plywood

Douglas Fir

Fir plywood grades are based upon the quality of veneer permitted in the face and back plies. All veneer is rotary-cut and displays the characteristic irregular grain pattern of flat-grain lumber.

Plywood grades are identified on the basis of the veneer grades employed in faces and backs. Four veneer grades are recognized, A, B, C and D (see page 193) that are adapted to interior use as wall coverings, ceilings, partitions, floors, and similar applications.

Of these, the A-D grade, known as Ply-panel, is most widely used for interior finishing where only one surface of the panel is exposed. This grade is suitable for painting, light stain glazing, and other fine finishing. It may also be used as a base for wallpaper.

Interior grade A-B plywood is a new grade and makes available a panel with finest appearance quality face and a moderate quality back. Cabinet doors in utility rooms, kitchens, and storage areas are among its uses.

Interior grade B-D plywood, known as Plybase, is an entirely new grade with face plies of the same paintable quality as the back in the A-B grade just described. Its tight solid face is intended to provide a backing for use under linoleum, but it may also prove suitable as a base for wallpaper or for canvassed and painted walls.

Softwoods other than Douglas fir which are available for many of the same uses include ponderosa pine, knotty western white pine, and Sitka spruce.

Hardwoods

Hardwood plywood for interior use is classed as Types II (Water resistant) and III (Dry bond). Unlike fir plywood, which is all veneer, hardwood plywood may be of all-veneer or of lumber-core construction. Its description is exceedingly more complex than that of Douglas fir plywood in that hundreds of woods, both domestic and imported, are avail-

able as face veneers, many of them characterized by wide variations in appearance both as a result of natural growth variations and of different methods of cutting.

In general, the straight grained, less highly figured woods are rotary-cut or flat-sliced to obtain plain face veneers, often of attractive color and texture, or cross-band and core stock. Woods characterized by interlocked or other irregular grain are usually quarter-sliced or back-cut on a staylog to reveal beautiful stripe, mottle, or flake figures. Hardwood plywood is specified as to species and grade of face and back veneer; grades of hardwood veneer are 1, 2, 3 & 4. (See page 193.)

Each of the hundreds of hardwoods employed as plywood faces is characterized by its individual combination of color, grain pattern, texture, and figure.

Interior Uses

Walls

Douglas fir plywood of the Plypanel grade is adapted to wall paneling which is to be painted, finished in natural color, given a light stain glaze, enameled, or covered with wallpaper. The Plybase grade approaches Plypanel in surface tightness and should be suitable as a wallpaper base or for canvassed and enameled walls. For better construction, panels $\frac{3}{8}$ in. thick are recommended over studs on 16-in. centers, but $\frac{1}{4}$ -in. panels are often used for reasons of economy. The $\frac{1}{4}$ -in. panels are completely satisfactory for application over old plaster walls.

Hardwood plywood is adapted to the same applications as Douglas fir and, in addition, affords an almost infinite variety of rich and luxurious effects, which are possible only through the use of fine figured hardwoods. In general, only the plainer woods, such as gum, are given any but a stained or natural finish. The 1-3 grade of $\frac{1}{4}$ -in. thickness is commonly employed for most economical construction taking advantage of the natural beauty of the wood, although thicker panels are structurally advantageous when applied over studs on 16-in. centers.

The finest plywood available for use as wall paneling of the type usually employed in commercial and public buildings is the architectural grade of lumber-core panel, which is $1\frac{1}{16}$ -to 1-in. thick with one decorative face of grade 1 veneer. Although 4 by 8-ft panels are widely used, the diversity of architectural effects which may be secured with

decorative hardwood plywoods applied either vertically or horizontally offers almost unlimited possibilities for smaller sizes, which are, incidentally, more economical. Panels longer than 8 ft are obtainable at some premium in cost, may sometimes be found advantageous in situations where a particular effect is desired.

Application of birch panels, shown in several photos, illustrates the beauty obtainable through the use of economy grade hardwoods. Plywoods of this type are the result of the recent development of mass production in the manufacture of hardwood plywood. As a result of manufacturing economies introduced in producing these lower priced hardwood panels, certain refinements in the selection and matching of veneers are lacking as compared with the grade 1 faces described in the Commercial Standard.

Ceilings

The opportunities for the use of plywood in ceilings are not so diverse as in the case of wall paneling. Nevertheless, many of the advantages of plywood paneling are applicable to ceilings, as it permits large, unbroken crack-free areas when joints are properly treated and the panels are painted or covered with paper. For this type of treatment, the Plypanel and Plybase grades of Douglas fir in panels $\frac{3}{8}$ or $\frac{1}{4}$ -in. thick and comparable grades of plain economical hardwoods, usually of $\frac{1}{4}$ -in. thickness, are generally employed. Panels that reveal the grain of the wood are frequently used as ceilings in recreation rooms and in "expansion room" remodeling, where they are usually given finishing treatments similar to those used on wall paneling.

Built-Ins

Plywood is ideally adapted to the fabrication of built-in cabinets, wardrobes, counters, and other of the dozens of conveniences that distinguish a well designed home. In employing Douglas fir, the Plypanel grade is usually selected when only one surface is to be exposed, as in facings, ends, linings, and drawer bottoms. The A-A grade, or sometimes the A-B grade, is preferred for doors and single thickness wall sections where both sides are visible. Hardwood plywood with one or two good faces is similarly adapted to the same uses. Exterior plywood should be specified for counters around kitchen sinks or built-in bathroom lavatories. Plywood of $\frac{3}{4}$ -in. thickness is most commonly used for cabinet doors and shelves, although panels of $\frac{5}{8}$ and $\frac{1}{2}$ in. are also used.

Floors

Plywood finds application both as a sub-floor and finish flooring. Its most common use, however, is as sub-flooring or as a base for linoleum and other floor coverings.

The Plyscord (Sheathing) grade of Douglas fir plywood in $\frac{1}{2}$ and $\frac{5}{8}$ -in. thickness is employed as sub-flooring with joists on 16 and 20-in. centers respectively when a finish strip flooring of wood is also used. Plybase fir plywood of $\frac{3}{8}$ or $\frac{1}{4}$ in. thickness is often used over sub-flooring as an underlay for linoleum, rubber, or asphalt tile, but when employed as a combination sub-floor and base for these surfacing materials or for wall-to-wall carpeting, $\frac{1}{2}$ -in. to $\frac{3}{4}$ -in. panels should be used, depending upon joist spacing. The use of Plybase or Plypanel grades of fir plywood of $\frac{1}{4}$ or $\frac{3}{8}$ -in. thicknesses is also popular over old, worn flooring in remodeling work, producing an ideal base for various surfacing treatments as discussed above.

Application Methods

Proper wall panel arrangement is basic to the successful application of plywood both from the standpoint of appearance and economy of material. The discussion in the Time-Saver Standards is directed principally toward consideration of thinner plywoods and is not applicable to the architectural grade of lumber-core plywood.

Metal moldings faced with veneer to match paneling are available for a number of widely used species, and offer an attractive solution to the treatment of joints in $\frac{1}{4}$, $\frac{3}{4}$, and $\frac{3}{16}$ -in. panels.

As a preliminary to actual installation of plywood paneling, the panels should be stored in stickered piles for a few days under conditions of the room where they are to be used. This period of conditioning serves to insure against problems arising from moisture pick-up or loss. In new construction it is desirable, and many building codes require, that 2 by 4-in. firestops be inserted between the studs about four feet from the floor. Such horizontal members, together with the studs, serve for the attachment of plywood panels.

Plywood panels may be nailed directly to the studs, which should first be plumbed or, in somewhat better practice, a $\frac{1}{4}$ by 2 $\frac{1}{2}$ -in. plywood furring strip may be nailed along its center line to the stud and the panel attached through the furring to the stud. Panel



Above: oak plywood at back of classroom relieves concrete block walls in low-cost school, Robert A. Green, Architect



Above: red oak plywood on front and rear walls and covering beams adds warmth to church also designed by Robert Green



Above: rift-grain oak in this office demonstrates a striking application of decorative hardwood plywood. Below: broken-stripe, figured mahogany in executives' dining room. Cram and Ferguson, Architects





Above: striated plywood blocks form an interesting pattern for indirectly lighted ceiling. Below: fir plywood offers smooth, solid base for finish flooring. Workman is laying floor covering over $\frac{3}{8}$ -in. stock



joints are thus protected against the effects of possible shrinkage or settling. The use of 6d finish or casing nails spaced 6 in. apart at the outer edges of the panel and at 12-in. intervals on intermediate studs is recommended for plywood $\frac{3}{8}$ and $\frac{1}{2}$ -in. thick. Four penny and 8d nails at the same spacing are similarly recommended for $\frac{1}{4}$ and $\frac{3}{4}$ -in. thicknesses respectively. An alternative recommendation for $\frac{1}{4}$ -in. hardwood panels is to use $\frac{3}{4}$ -in. No. 19 brads, which make an even less conspicuous

hole than the 4d finish nail. Most satisfactory, although not essential, is the attachment to the furring strips (or studs) by means of glue, which is applied immediately prior to nailing. Electronic heating methods have also been developed that permit the rapid cure of resin adhesives. Through the use of a portable "spot welder," rapid attachment of panels is possible without the use of nails.

In remodeling work, plywood is often applied over old plaster walls. Attachment may be provided through the use of $\frac{1}{4}$ -in. plywood furring strips $2\frac{1}{2}$ -in. wide, which are nailed to the studs. Horizontal furring should be spaced so as to provide support at panel edges and about 2 ft apart, while vertical furring is used only at panel edges.

In applying plywood to masonry walls, 1 by 2-in. furring strips can be nailed or pegged to the masonry at 16-in. intervals. Six penny steel cut nails spaced at 12 in. are recommended. A $\frac{1}{4}$ -in. air space at top and bottom of the panels for circulation may be desirable if moderate dampness is a problem. Additional protection against moisture can be secured by applying asphalt building paper to the face of the furring. Panels should also be back primed with a resin sealer before erection, although if condensation of moisture or seepage is severe, the interior types of plywood will not prove satisfactory.

Plywood ceiling installations are essentially the same as walls. Panels should always have backing at the edges as well as intermediate support at 4-ft intervals, which is provided by the joists and by cats which are inserted between the joists. Panels may be applied with the face grain either along or across the joists.

When, as in remodeling, ceiling panels

are installed over plaster, $\frac{1}{4}$ by $2\frac{1}{2}$ -in. plywood or 1 by 2-in. wood furring strips should first be applied by nailing through the plaster to the joists. Furring strips that run across joists should be spaced about 2 ft apart, whereas in the direction parallel to the joists furring strips are needed only at panel edges. Recommendations previously given relative to nailing schedules for walls are equally applicable to ceiling installations. A number of plywood floor construction details are shown on page 195.

Finishing

Modern finishing treatments for plywood emphasize (1) the natural effect of the grain, color, and figure of the wood obtained through clear finishes, or (2) the light effects which may be achieved without losing the distinctive characteristics of texture, grain, and figure by subduing the normal grain contrast of the wood with pigmented sealers.

Bibliography

- ¹ Wood, Andrew Dick, and Linn, Thomas Gray. *Plywoods, their development, manufacture and application*. Chemical Publishing Co., Brooklyn, N. Y. 1943.
- ² Perry, Thomas D. *Modern Plywood*, 2nd ed. Pitman Publishing Corporation, New York. 1948.
- ³ *Douglas Fir Plywood*. Commercial Standard CS45-48, U. S. Dept. of Commerce, Washington, D. C. 1948.
- Hardwood Plywood*. Commercial Standard CS35-49, U. S. Dept. of Commerce, Washington, D. C. 1949.
- ⁴ Markwardt, L. J., and Wilson, T. R. C. *Strength and Related Properties of Woods Grown in the United States*. U. S. Dept. of Agr. Tech. Bul. #479. 1935.
- Wangaard, Frederick F. *Mechanical Properties of Wood*. John Wiley and Sons, New York. 1950.

Application of plywood in homes varies from the richly paneled living room of walnut at left to the functional and economical use of unselect birch for the walls and cabinets

in the kitchen at right. The second photo illustrates the popular trend to built-in units of plywood. Architects: left, Daniel Schwartzman; right, R. Kilburn



INTERIOR PLYWOOD: I—Simplified Design Method

By Frederick F. Wangaard

Associate Professor of Forest Products, Yale University

The following sheets form a compilation of technical information on plywood prepared by the author and assembled here for convenience. The suggested simplified methods of calculation apply reasonably well with usual plywood types under ordinary conditions of service, but they are not entirely valid for all types of plywood or constructions, or for all spans and span-depth ratios. They are not applicable to structures proportioned so plywood is in the buckling range: the results will be too high.

As shown in Table I, approximate methods of calculating plywood strength and stiffness neglect any contribution to tensile strength, compressive strength, or stiffness made by plies stressed across the grain. Only in the case of shear through the thickness of the panel is the full cross-sectional resistance of square-laid plywood considered.

Application of the methods outlined in Table 1 involves the use of unit stresses for solid wood of the quality employed in the various plies. Basic stress values for clear solid wood of a number of species commonly employed in plywood are given in Table 2. These values have already been adjusted for variation, long-time duration of stress, and include a factor of safety. Stress values for extreme fiber in bending, compression parallel to grain, and compression perpendicular to grain have also been increased 25 per cent over those originally published to adapt them to interior use applications. Such basic stress values, however, require modification by a reduction factor according to the weakening influence of any defects that may be present in order to determine the appropriate unit stress value. Once this is known for the particular plies involved, calculation of plywood strength is possible following the methods given in Table 1. Unit stresses have been prepared for the standard grades of Douglas fir plywood and are recommended for direct application according to the methods outlined in Table 1.*

* Technical data on plywood, section 2, rev. 1948. Douglas Fir Plywood Assn., Tacoma, Wash.

TABLE 1. Design method and allowable stresses for plywood¹

Property	Direction of stress wrt direction of face grain	Area to be considered	Unit stress to be used
Tension	Parallel or perpendicular $\pm 45^\circ$	Parallel plies ² only Full cross-sectional area	Unit stress for extreme fiber in bending One-sixth unit stress for extreme fiber in bending
Compression	Parallel or perpendicular $\pm 45^\circ$	Parallel plies ² only Full cross-sectional area	Unit stress in compression parallel to grain One-third unit stress in compression perpendicular to grain
Bearing at right angles to plane of plywood		Loaded area	Unit stress in compression perpendicular to grain
Load in bending	Parallel or perpendicular	Bending moment $M =$ KSI/c^2	Unit stress for extreme fiber in bending
Deflection in bending	Parallel or perpendicular	Deflection may be calculated by the usual formula ⁴	Unit value for modulus of elasticity
Deformation in tension or compression	Parallel or perpendicular	Parallel plies ² only	Unit value for modulus of elasticity
Shear through thickness	Parallel or perpendicular $\pm 45^\circ$	Full cross-sectional area Full cross-sectional area	Double unit stress in horizontal shear Four times unit stress in horizontal shear

¹ From Forest Products Laboratory Report R1630, rev., Madison, Wis. 1946.

² By "parallel plies" is meant those plies whose grain direction is parallel to the direction of principal stress.

³ Where $S =$ unit stress for extreme fiber in bending $I =$ moment of inertia computed on basis of parallel plies only; $c =$ distance from neutral axis to outer fiber of outermost ply having its grain in the direction of the span; $K = 1.50$ for three-ply plywood having the grain of the outer plies perpendicular to the span; $K = 0.85$ for all other plywood.

⁴ Deflection may be calculated by the usual formulas, taking as the moment of inertia that of the parallel plies plus one-twentieth that of the perpendicular plies. (When face plies are parallel, the calculation may be simplified, with but little error, by taking the moment of inertia as that of the parallel plies only.)

TABLE 2. Basic stresses of clear wood to be used in calculating strength of plywood for interior service¹

Species	Extreme fiber in bending	Horizontal shear	Compression grain	Modulus of elasticity
	psi	psi	psi	1000 psi
Basswood	1550	100	150	1100
Beech	2750	185	620	1600
Birch, Yellow	2750	185	620	1600
Elm, American	2000	150	310	1200
Fir, Douglas	2750	130	400	1600
Gum, Red or Black	2000	150	400	1200
Mahogany, Central American	2500	185	540	1300
Maple, Hard	2750	185	620	1600
Oak, Red or White	2550	185	620	1500
Pine, Ponderosa or Western White	1600	120	310	1000
Poplar, Yellow	1600	120	280	1100
Redwood	2200	100	310	1200
Walnut, Black	2600	185	480	1500

¹ Adapted for the most part from Forest Products Laboratory Report R1715, Recommendations for basic stresses. 1948.

INTERIOR PLYWOOD: 2-Panel Sizes and Weights

By Frederick F. Wangaard

Associate Professor of Forest Products, Yale University

TABLE 3. Standard panel sizes of interior plywood

One of the obvious advantages of plywood lies in its relatively large size and light weight panels. Stock panels of interior plywood are available in a variety of widths, lengths, and thicknesses as shown in Table 3. Table 3 indicates that the sizes in greatest demand are 36 and 48-in. widths in lengths of 72, 84, and 96 in. Panels of the shorter lengths shown in the table are often adapted to specific architectural uses and are advantageous from the standpoint of economy in comparison with the re-cutting of larger panels. Although not widely used, Douglas fir panels up to 4 by 12 ft are included among the standard sizes. Many hardwoods are also obtainable on special order in panel lengths up to 12 ft.

The light weight of plywood panels contributes to their ease of handling and application. Weights of plywood panels correspond to the density of the woods used in the various plies. Weights per sq ft for Douglas fir plywood of standard thickness are shown in Table 4. It is seen that a 4 by 8 ft, 1/4-in. panel weighs approximately 25 lbs. Because of the various combinations of species employed in hardwood panels, it is not possible to present detailed tables of weights for each thickness, but in as much as the woods most commonly used as inner plies in hardwood panels are similar to fir in density, Douglas fir weights may serve also as rough approximations of hardwood plywood weights.

TABLE 4.

Weights of Douglas fir plywood

Thickness in.	Lb per sq ft
3/16	0.640
1/4	0.790
3/8	1.125
1/2	1.525
5/8	1.825
3/4	2.225

DOUGLAS FIR							
Lengths	Widths	Thickness (in.) and Number of Plies					
		3/8, 3 ply	1/4, 3 ply	3/8, 3 ply	1/2, 5 ply	3/4, 5 ply	3/4, 5 Ply
60	30	X	X	X	X	X	X
	36	X	X	X	X	X	X
	42	X	X	X	X	X	X
	48	X	X	X	X	X	X
72	30	X	X	X	X	X	X
	36	X	O	O	O	O	O
	42	X	X	X	X	X	X
	48	X	O	O	O	O	X
84	30	X	X	X	X	X	X
	36	X	O	O	O	O	X
	42	X	X	X	X	X	X
	48	X	O	O	O	O	X
96	30	X	X	X	X	X	X
	36	X	O	O	O	O	X
	42	X	X	X	X	X	X
	48	X	O	O	O	O	O
108	30	X	X	X	X	X	X
	36	X	O	O	O	O	X
	42	X	X	X	X	X	X
	48	X	O	O	O	X	X
120	30	X	X	X	X	X	X
	36	X	O	O	O	O	X
	42	X	X	X	X	X	X
	48	X	O	O	O	O	O
144	30	X	X	X	X	X	X
	36	X	X	X	X	X	X
	42	X	X	X	X	X	X
	48	X	X	X	X	X	X

HARDWOODS												
Lengths	Widths	Thickness (in.) and Number of Plies										
in.	in.	1/4, 3 ply	3/8, 3 ply	1/4, 3 ply	3/8, 5 ply	3/8, 5 ply	1/2, 5 ply	3/4, 7 ply	3/4, 7 ply	13/16, 5 ply	3/4, 5 ply	1, 5 ply
										lb. core	lb. core	lb. core
48	24	X	X	O	X	X	X	X	X	X	X	X
	30	X	X	O	X	X	X	X	X	X	X	X
	36	X	X	O	X	X	X	X	X	X	X	X
	42	X	X	X	X	X	X	X	X	X	X	X
	48	O	X	O	X	O	X	X	O	O	O	X
60	24	X	X	O	X	X	X	X	X	X	X	X
	30	X	X	O	X	X	X	X	X	X	X	X
	36	O	X	O	X	X	X	X	X	X	X	X
	42	X	X	X	X	X	X	X	X	X	X	X
	48	O	X	O	X	O	X	X	O	O	O	X
72	24	X	X	O	X	X	X	X	X	X	X	X
	30	X	X	X	X	X	X	X	X	X	X	X
	36	O	X	O	X	O	O	X	X	O	O	X
	42	X	X	X	X	X	X	X	X	X	X	X
	48	O	X	O	X	O	O	X	O	O	O	X
84	24	X	X	O	X	X	X	X	X	X	X	X
	30	X	X	X	X	X	X	X	X	X	X	X
	36	O	X	O	X	O	O	X	X	O	O	X
	42	X	X	X	X	X	X	X	X	X	X	X
	48	O	X	O	X	O	X	O	X	O	O	X
96	24	X	X	O	X	X	X	X	X	X	X	X
	30	X	X	X	X	X	X	X	X	X	X	X
	36	O	X	O	X	O	O	X	X	O	O	X
	42	X	X	X	X	X	X	X	X	X	X	X
	48	O	X	O	X	O	O	X	O	O	O	O
120	24	—	—	—	—	—	—	—	—	—	—	—
	30	—	—	—	—	—	—	—	—	—	—	—
	36	—	—	—	—	—	—	—	—	—	—	—
	42	—	—	—	—	—	—	—	—	—	—	—
	48	—	—	O	—	—	—	—	—	O	O	—

x indicates standard size

o indicates sizes most commonly used

x indicates standard size

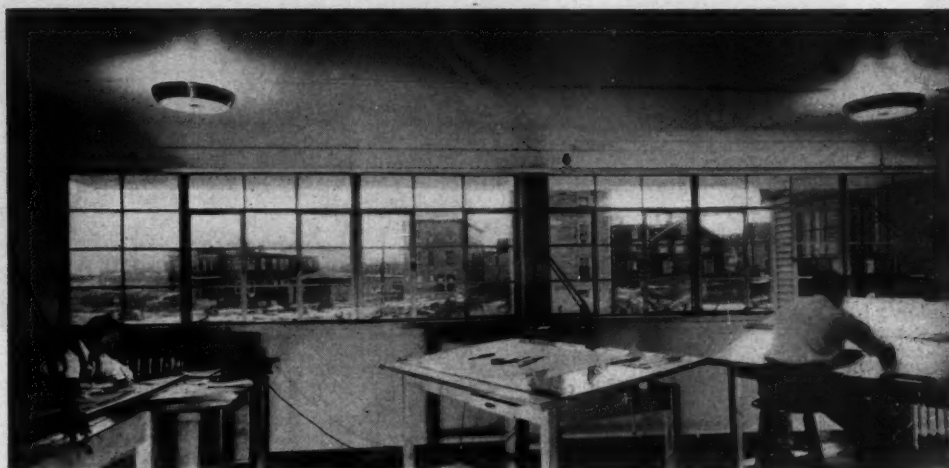
o indicates sizes most commonly used

PRODUCTS for Better Building

Curtain Walls for Industrial Construction

How to erect a wall quickly and economically has long been a challenge to architects, contractors and material manufacturers alike. What looks like a practical solution for industrial construction comes from the shops of R. P. Systems, engineering subsidiary of Leslie R. Porter Co., general contractor at Beverly, Mass. The development utilizes a concealed spline fastening and a comparatively new type of wall board, the *Kaylo C-A Panel*, to provide permanent walls that are said to withstand heavy loads. The parts also can be completely salvaged if desired; no nails, screws or bolts are involved.

Experimental work on the project was inspired by an objection to visible type of fastenings previously used with this type of panel, which consists of a 1½ in. thick incombustible core of hydrous calcium silicate laminated between ½ in. cement-asbestos boards. The new method of fastening is done as follows:



Curtain walls in Leslie R. Porter Co. office (top) are fastened by grooving laminated panel edges (above left) and inserting concealed splines (above right)

Slots, 1 in. deep, ¼ in. wide, are routed directly in the center of all four panel edges. The first panel is set horizontally with the bottom groove over one leg of an angle. A structural tee is slipped into the top groove, and its stem fastened to the building frame. The next panel is slipped over the other side of the tee, and the process repeated for the following panels. In the experimental project, splines of composition board, 2 in. wide and ¼ in. thick, were inserted in the vertical panel slots.

Distributed load tests showed that the panels withstood pressures up to 71.2 lb per sq ft before spline joints failed. Other tests showed strong impact resistance for panels and joints. The panels are further claimed to offer more insulating value than a 16-in. concrete wall, and to be incombustible and resistant to moisture and fungus. They can be worked with ordinary tools. Kaylo Div., Owens-Illinois Glass Co., Ohio Bldg., Toledo, Ohio.

(Continued on page 200)



Impact test (above left) and distributed load test (below left) approximate actual conditions, show panels and joints to be adequately strong

LITERATURE FOR THE OFFICE



New booklet on school lighting (left) presents methods used in a number of actual school and college classroom installations, as example shown at right

School Lighting

(1) *Day-Brite lights the way . . . for students . . . across the U.S.A.*; (2) *It happened in Denver's Schools . . . it can happen in yours.* The first of these booklets offers a series of actual examples of various school and college classrooms in which lighting problems were solved according to particular needs. There are full-page photographs to accompany each case history.

The second booklet recounts in detail the lighting story of the Denver Public School System — teachers' report of need, school board action, test cases, and completed project. (1) 24 pp., illus.; (2) 16 pp., illus. School Lighting Division, Day-Brite Lighting Inc., 5450 Bulwer Ave., St. Louis 7, Mo.*

School Kitchens

Modern School Feeding Programs and Blodgett Ovens. Cases of specific schools with their cooking programs and facilities are cited in this booklet. Kitchen floor plans are included, with a check list of equipment. Examples (there are eight) tell how many persons are cooked for, basic menus prepared, and other items of interest peculiar to the situation. 8 pp., illus. The G. S. Blodgett Co., Inc., 50 Lakeside Ave., Burlington, Vt.

* Other product information in Sweet's File, 1951.

Window Shade Products

• *Inspirations for Interior Designers.* This booklet, in catalog style, discusses various materials and styles for use in the window shade line and also for use as walls, room dividers, and door closings. The materials listed include bambino, wood loom, bamboo and Tapestron, as well as the more conventional venetian blinds and window shade materials. 12 pp., illus. The Holland Shade Co., 999 Third Ave., New York 22, N. Y.

• *Guide for the Selection and Specification of Window Shades and Rollers.* Here is pertinent information about window shades and window shade fixtures, including rollers and brackets, for commercial buildings, schools, homes, and railway cars. There is a check list in the center of the book for use as a specifications guide in the selection of shades and rollers for various types of buildings. 16 pp., illus. Stewart Hartshorn Co., Empire State Bldg., New York 1, N. Y.

Predicting Interior Daylighting

PC Daylighting Nomograph. Developed at the Pittsburgh Corning Daylighting Research Center, this nomograph is said to make possible the prediction of daylighting levels in a room

before the building is constructed. The information required for use with it in order to make a daylighting prediction can be obtained from the architect's plans and local weather bureau records. The amount of daylight which will be present at any point in a room and at any time of day any day in the year can be predicted with great accuracy, it is reported. Effects of building orientation and geographical location, fenestration area, sun altitude and azimuth, clouds, etc., are all accounted for, yet the chart is said to be simple enough for a high school student to manipulate. It is expected to be particularly useful in designing schools, offices, factories and other buildings where the occupants perform tasks which require a comfortable environment for efficient critical seeing. Pittsburgh Corning Corp., Public Relations Dept., 307 4th Ave., Pittsburgh 22, Pa.

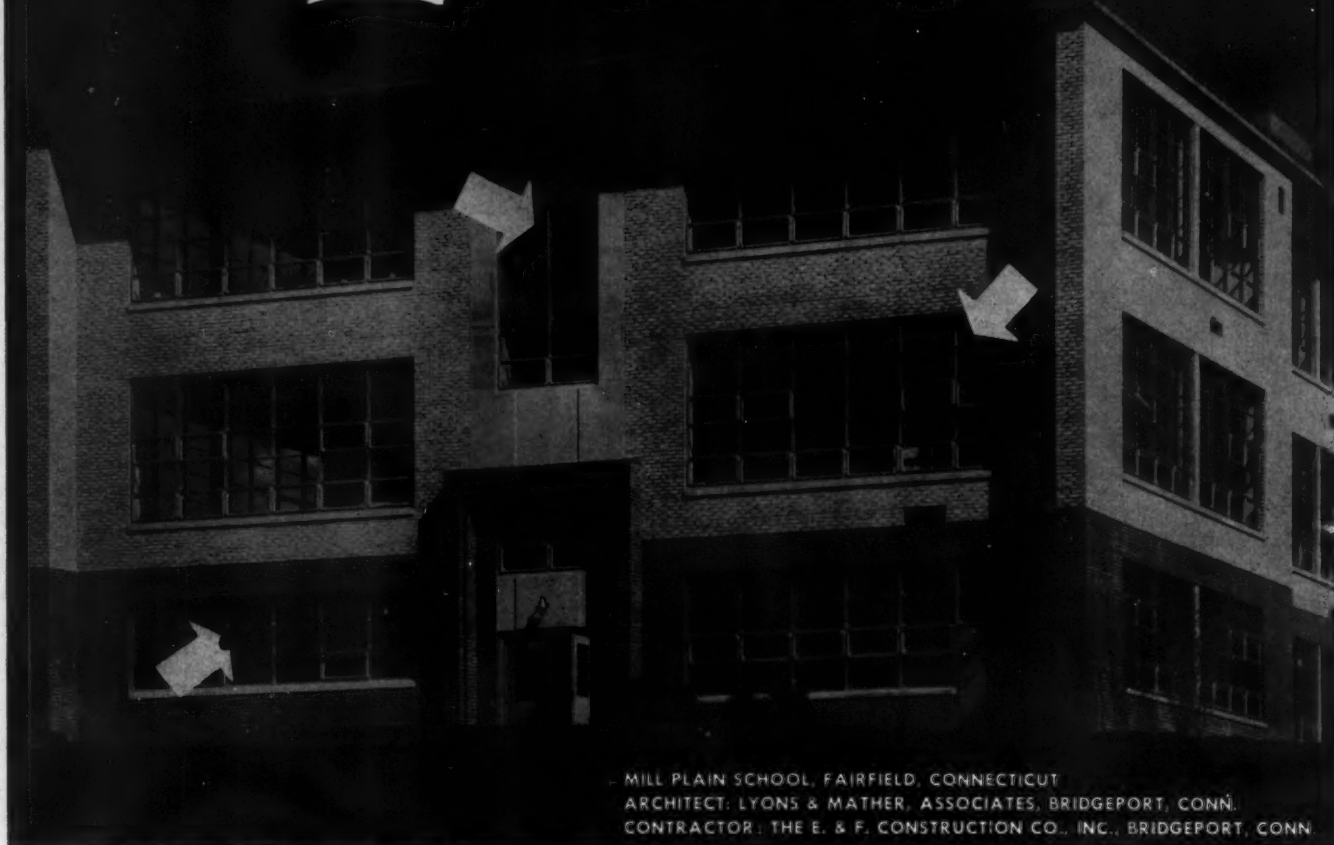
Concrete Standards Specifications

A.C.I. Standards — 1951. A compilation of all current American Concrete Institute Standards except the Detailing Manual, available separately, this book includes the newly-revised Building Code and Specifications for Concrete Pavements and Bases, as well as a new standard on pneumatically-placed mortar. Other standards give authoritative useful information on application of portland cement paint, winter concreting methods, requirements for precast floor units, farm silos, design of concrete mixes, specifications for cast stone, metal supports for reinforcement, and measuring, mixing and placing concrete. Material is based on the Institute's research and is reprinted here from the following issues of its *Journal*: June, 1945; October, 1946; September, 1948; September, 1949; April, 1951 and May, 1951. Diagrams and charts are included. 222 pp. Price, \$3.00. American Concrete Institute, 18263 McNichols Rd., Detroit 19, Mich.

(Continued on page 234)

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*For complete details
check Sweet's Catalog $\frac{17a}{67}$*

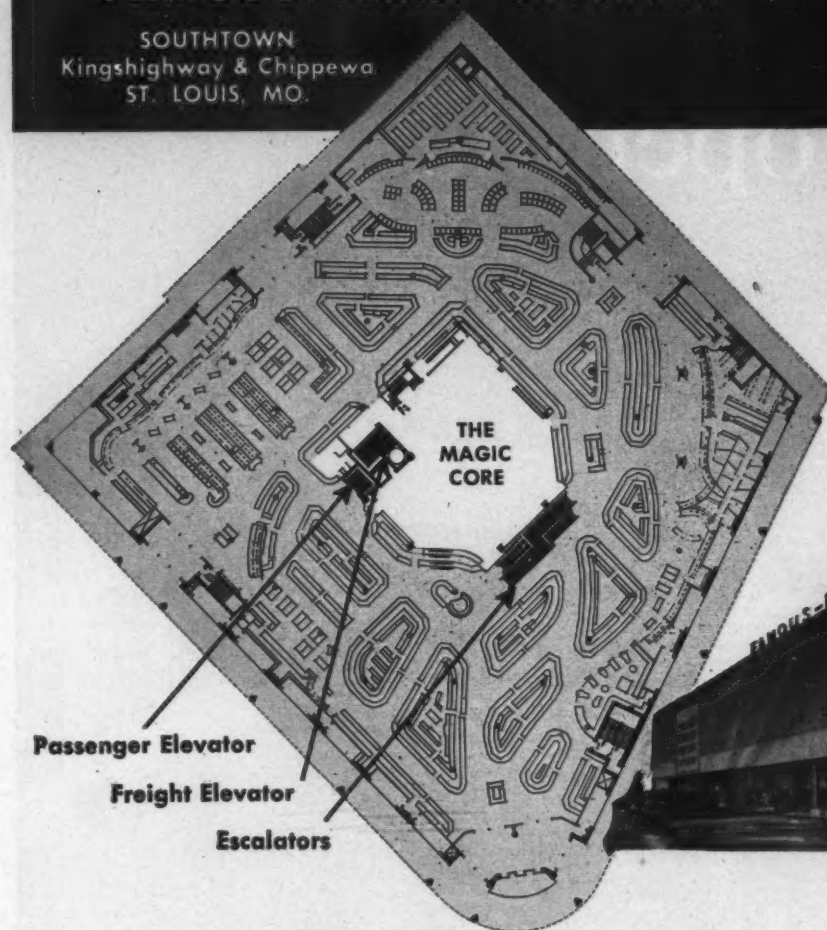


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INTERIOR PLYWOOD: 3-Grades

By Frederick F. Wangaard

Associate Professor of Forest Products, Yale University

Douglas Fir

Fir plywood grades are based upon the quality of veneer permitted in the face and back plies. All veneer is rotary-cut and displays the characteristic irregular grain pattern of flat-grain lumber. Four veneer grades are recognized.

Grade A (Sound) veneer is free from knots, splits, and other open defects, but streaks and discolorations, sapwood, and neatly made patches are accepted. When a face consists of more than one piece, it is reasonably matched for grain and color at the joints. It has a smooth surface suitable for painting.

Grade B (Solid) veneer presents a surface free from open defects, but, in addition to the defects permitted in Grade A veneer, this grade admits circular wood plugs or synthetic plugs having hard level surfaces, and sound tight knots up to 1 in. diam. Slightly rough, but not torn, grain and other minor sanding defects are permitted in this grade, which is paintable.

Grades C and D are used in backs and interior plies of panels in which appearance affects serviceability and permit such additional defects as knotholes, open pitch pockets, and splits of prescribed sizes.

Plywood grades are identified on the basis of the veneer grades employed in faces and backs. There are four grades of Douglas Fir plywood that are adapted to interior use as wall coverings, ceilings, partitions, floors, and similar applications. These grades are A-A (Sound 2 Sides — Int.), A-B (Sound/Solid — Int.), A-D (Sound 1 Side — Int.); and B-D (Solid 1 Side — Int.).

Of these, the A-D grade, known as Plypanel, is most widely used for interior finishing where only one surface of the panel is exposed. This grade is suitable for painting, light stain glazing, and other fine finishing either masking, subduing, or accentuating the natural grain contrast of the wood. It may also be used as a base for wallpaper.

Interior grade A-A plywood has

two faces of top appearance quality and is intended for uses that require both sides to be finished. Such panels find application in cabinet doors, booth partitions, and store displays.

Interior grade A-B plywood is a new grade and makes available a panel with finest appearance quality face and a moderate quality back. Cabinet doors in utility rooms, kitchens, and storage areas are among its uses. The back of this grade is of paintable quality and, if minor defects are filled, it can be finished to virtually a defect-free appearance.

Interior grade B-D plywood, known as Plybase, is an entirely new grade with face plies of the same paintable quality as the back in the A-B grade just described. Its tight solid face is intended to provide a backing for use under linoleum, but it may also prove suitable as a base for wallpaper or for canvassed and painted walls.

Softwoods other than Douglas fir which are available for many of the same uses include ponderosa pine, knotty western white pine, and Sitka spruce.

Hardwoods

Hardwood plywood for interior use is classed as **Types II (Water resistant), and III (Dry bond)**, in Commercial Standard CS 35-49. Unlike fir plywood, which is all veneer, hardwood plywood may be of all veneer or of lumber-core construction (Table 3). Its description is exceedingly more complex than that of Douglas fir plywood in that hundreds of woods, both domestic and imported, are available as face veneers, many of them characterized by wide variations in appearance both as a result of natural growth variations and of different methods of cutting.

In general, the straight grained, less highly figured woods are rotary cut or flat-sliced to obtain plain face veneers, often of attractive color and texture, or cross-band and core

stock. Woods characterized by interlocked or other irregular grain are usually quarter-sliced or back-cut on a staylog to reveal beautiful stripe, mottle or flake figures. It is with veneers of the latter type that "back-matching" or "slip-matching" of veneers from the same original flitch to produce panel faces of beautiful symmetry or remarkable uniformity is most successful.

Hardwood plywood is specified as to species and grade of face and back veneer. There are four grades of hardwood veneer: **Grade 1 (Good)** veneer specifications vary slightly from species to species, but may be illustrated by the requirements for comb-grain white oak: veneer may be sliced or sawn, each face matched for color and grain at the joints. A few small burls and pin knots (less than 1/4 in. diam.), small mineral streaks, and inconspicuous small patches are permitted. Other defects such as knots other than pin knots, discolorations, worm holes, and splits are not permitted in Grade 1. Sapwood is excluded in the oak specification but is admitted in many species without limitation.

Grade 2 veneer covers all species. Matching for grain or color is not specified. The principal quality required is freedom from open defects and decay. Mineral streaks, stain discoloration, patches, and sapwood are not considered defects in this grade. This grade is the minimum adapted to exposed surfaces for interior construction.

Grade 3 permits sound tight knots and burls, knot holes, bark pockets, and splits or open joints of limited size, and **Grade 4 (Reject)** tolerates knot holes up to 1 1/2 in. diam. and comparable open defects. Grades 2 and 3 are commonly employed in plywood as inner plies and backs, although Grade 4 veneer is sometimes used as backs.

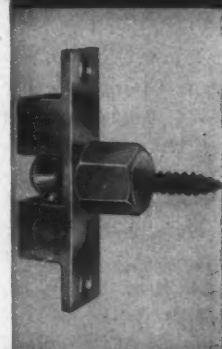
Each hardwood is characterized by its combination of color, grain pattern, texture, and figure. In addition, many display a wide variation in veneer characteristics.



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G-J 21
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* G-J Products include controlling devices for all types of doors in all types of buildings and assure years of unexcelled door operation and protection. For detailed description and applications refer to the G-J catalog.

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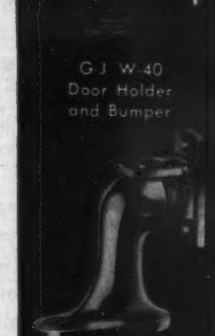
G-J F-9
Door Holder
and Bumper



G-J F-40
Door Holder
and Bumper



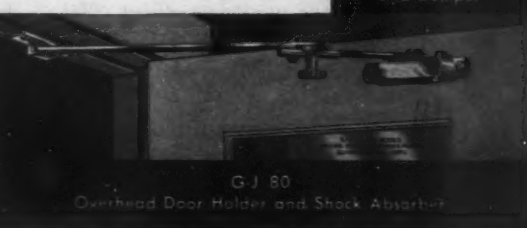
G-J W-40
Door Holder
and Bumper



G-J F-20
Door Holder
and Bumper



G-J 90
Surface Type Overhead Door Holder



G-J 80
Overhead Door Holder and Shock Absorber

INTERIOR PLYWOOD: 4—Species, Installation

By Frederick F. Wangaard

Associate Professor of Forest Products, Yale University

Some of the more important hardwood plywood species appear in the following tabulation which, although far from complete, may serve as a guide in the selection of plywood from the standpoint of architectural treatment of the material.

Light colored woods

Plain

Selected white gum
Yellow poplar

Variegated figure or grain pattern

Mild

Selected white birch
Selected white maple
Rotary-cut or plain-sliced oak
Duali
Magnolia (Ailon)

Pronounced

Curly maple
American elm

Stripe figure or grain pattern

Mild

Comb-grain oak
Korina (Limba)
Primavera
Bayott
Boase
Iroko

Pronounced

Quartered Philippine mahogany
(White lauan, Almon, Bagtikan)
Avodire
East Indian satinwood
Zebrawood

Dark colored woods

Plain

Selected red gum

Variegated figure or grain stain

Mild

Selected red birch
Plain-sliced mahogany (African or Central American)
Plain-sliced walnut

Pronounced

Figured walnut
Brazilian rosewood
Figured mahogany (African or Central American)
Brown ash
Kenya

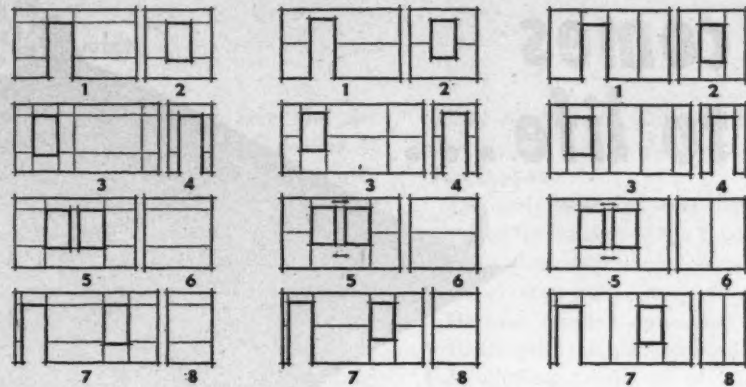
Stripe figure or grain pattern

Mild

Quartered walnut
Paldao

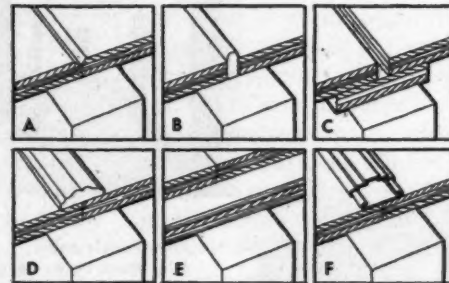
Pronounced

Quartered figured red gum
Quartered mahogany (African or Central American)
Quartered Philippine mahogany
(Red lauan, Tanguile)
Bubinga
Orientalwood
East Indian rosewood
Sapele
Andiroba

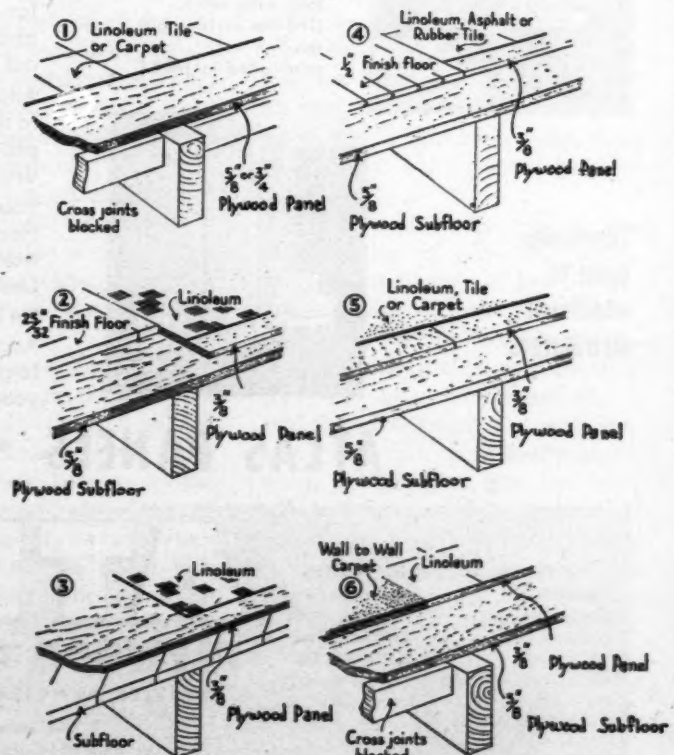


Variations for handling wall panels: right, vertical arrangement; center, two-panel horizontal arrangement; left, combination arrangement. Vertical joints are best placed at all openings, and wall spaces divided in orderly pattern. When width of opening exceeds 4 ft, panels are often placed horizontally

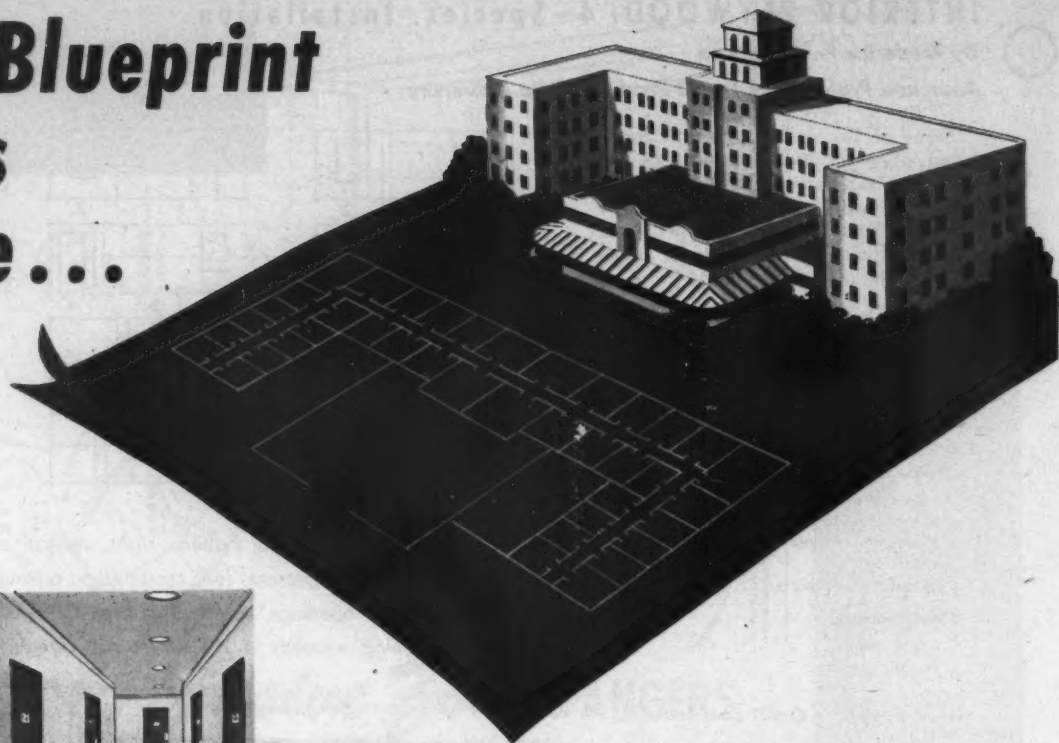
Suggested plywood joint treatments include: **A.** "V" joint formed by beveling panel edges. **B.** Inset bullnosed molding for raised joint. **C.** Recessed joint. **D.** Standard wood molding over butt joint. **E.** Plywood sheathing used as nailing or gluing base. **F.** Snap-on metal molding.



Plywood floor construction details include use of the Plypanel or Plybase grades of Douglas fir as combined subfloor and underlayment for linoleum, tile or carpeting (1); the use of the unsanded Plyscord grade as sub-flooring with wood strip finish flooring (2); and combinations of Plyscord sub-flooring and Plypanel or Plybase underlayment with various types of floor covering (3-6)



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INTERIOR PLYWOOD: 5-Finishes

By Frederick F. Wangaard

Associate Professor of Forest Products, Yale University

Plywood is adapted to a wide variety of finishing treatments including natural, stained, blonde, enameled, or painted finishes, or it may be covered with wallpaper. The most distinctive effects are, of course, obtainable only with finishes that permit the natural beauty of wood to be revealed.

Modern finishing treatments for plywood emphasize (1) the natural effect of the grain, color, and figure of the wood obtained through clear finishes or (2) the light effects which may be achieved without losing the distinctive characteristics of texture, grain, and figure by subduing the normal grain contrast of the wood with pigmented sealers. Prior to finishing, all nails should be countersunk and the holes filled with wood putty of matching color. The panel is then lightly sanded with 2/0 sandpaper and wiped clean.

Recommended finishing schedules vary with the species, but are illustrated by the following examples:

1. Walnut: Light natural finish. A coat of clear brushing lacquer is first applied. This coat should be steel wooled after drying (3-4 hours) and a second lacquer coat applied. This second coat is also rubbed with steel wool when dry and then rubbed with a good paste wax. A full finish, involving a third coat of lacquer, may be desired on trim or doors where heavy wear is anticipated.

2. Rift white oak: Blonde finish. Following preliminary sanding, a white pigmented resin sealer, which has been thinned 10-20 per cent with turpentine or mineral spirits, is brushed on the plywood. After setting for 3-5 minutes, it is rubbed into the pores of the wood, wiped clean, and allowed to dry for 24 hours. The surface is then lightly sanded with 2/0 sandpaper and finished with two coats of lacquer and wax as described for walnut.

Finishing recommendations for other hardwood species vary in certain details from the relatively simple

treatments described here and are available through plywood dealers. It is advisable, in any case, to sample any prescribed finishing treatment on scrap pieces of plywood before starting the job.

Light stain-glaze finishes which subdue the normal grain contrast of the species are very popular and effective finishing treatments for Douglas fir plywood. Steps in the treatment include (1) Application of interior white undercoat paint thinned with turpentine in the ratio 1 part undercoat to 1 part thinner. Within 10-20 minutes excess undercoat is wiped off with a cloth following the grain to attain the desired show-through of grain. When the surface is dry, it is lightly sanded with fine sandpaper. (2) A coat of thinned white shellac or clear resin sealer, the surface is again lightly sanded when dry. (3) Application of a color coat which may be a tinted interior undercoat, thinned enamel, color in oil, or a light stain. Only a thin color coat is applied and wiped or dry-brushed to the desired appearance. The surface is again sanded lightly when dry. (4) A final coat of flat varnish is then applied, and after drying, it is buffed with 3/0 steel wool.

Variations of the foregoing method include substitution of a white pigmented sealer (applied as described for blonde white oak) for steps 1 and 2. Another possibility is the elimination of step 1 (the white undercoat), otherwise following the procedure outlined.

A simple one-step finishing treatment for Douglas fir consists of a coat of stain wax, which is applied with a cloth or brush. This is wiped down after a few minutes to the desired shade.

The basic procedure for obtaining a "bleached" or blonde finish with Douglas fir consists of the application of thinned white undercoat which is wiped down following the grain to the desired tone before it becomes tacky. After drying, the surface is

lightly sanded and finished with a coat of clear shellac, flat varnish, or clear lacquer.

The only maintenance normally required for finishes of the types previously described is an occasional application of wax.

Highest quality enameled walls without visible joints are obtained by the following treatment of Douglas fir or gum plywood. For this type of finish, panels should be butted together closely and all nail holes, hammer marks, and joints filled with Swedish putty. The wood is next primed with thinned flat white oil paint followed by the application of inexpensive unbleached muslin (tobacco cloth grade). The muslin is applied similarly to wallpaper using ordinary wallpaper paste, which has been strained to remove lumps. After drying, a coat of glue size is brushed on. Any conventional enamel finishing system may be employed satisfactorily over this base. This type of treatment is especially desirable in kitchens and bathrooms.

Conventional wall and woodwork paint finishes are, of course, used successfully on plywood walls and built-ins. When water thinned paints are used, the plywood should first be sealed with a clear resin sealer, shellac, or a flat white paint to prevent raised grain.

Wallpapered walls require the close butting of plywood panels, which are commonly of Douglas fir, but may include some of the more economical hardwoods such as gum. Joints should be filled with Swedish putty and the surface primed with a thin flat white paint. The surface is next coated with wheat flour paste to which gelatin glue size has been added. Next is applied a layer of 3/4-pound deadening or lining felt, which is treated with the same paste and size. After butting the felt neatly at the joints, and rolling it smooth, wallpaper may be hung in the usual manner, using ordinary wheat flour paste.

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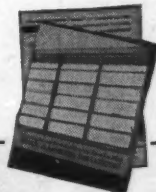
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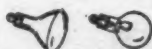
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(Continued from page 189)

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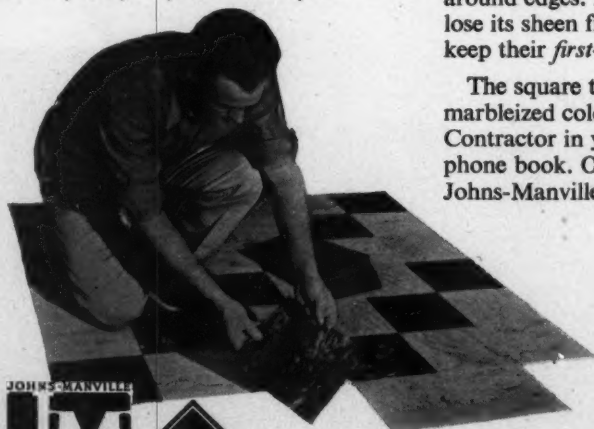
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(Continued on page 206)



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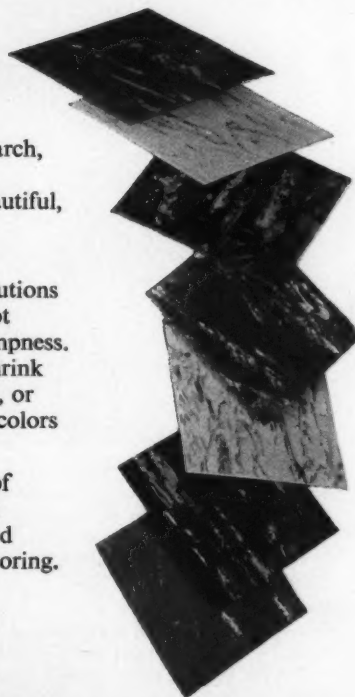
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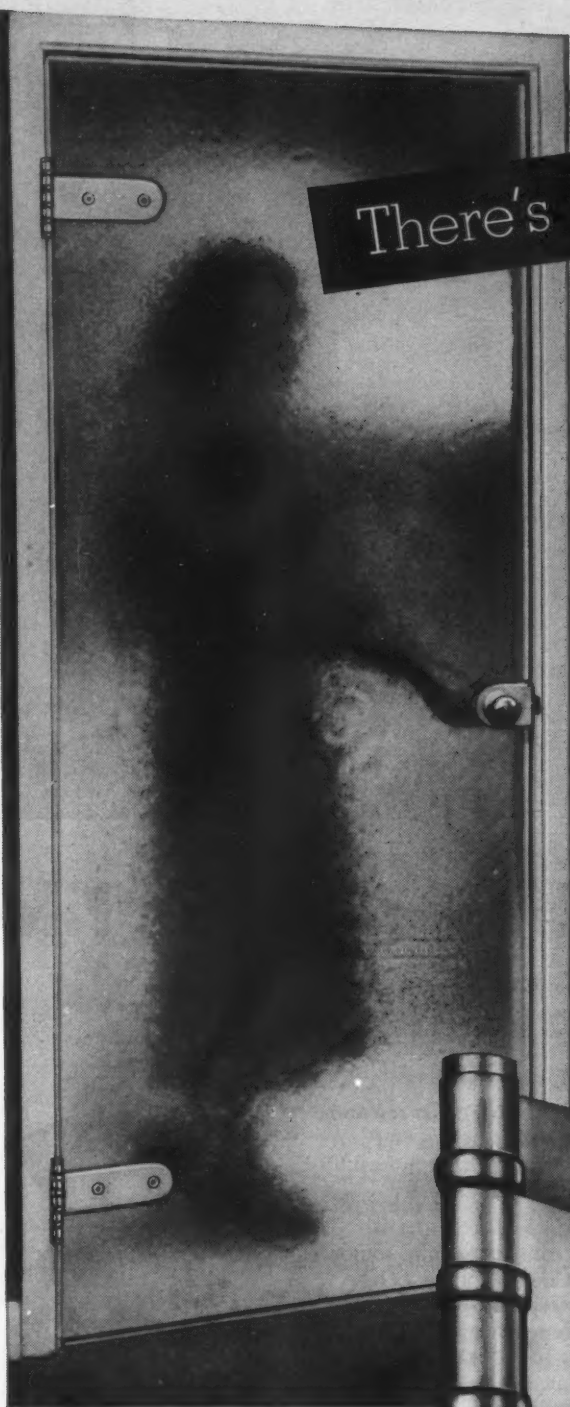
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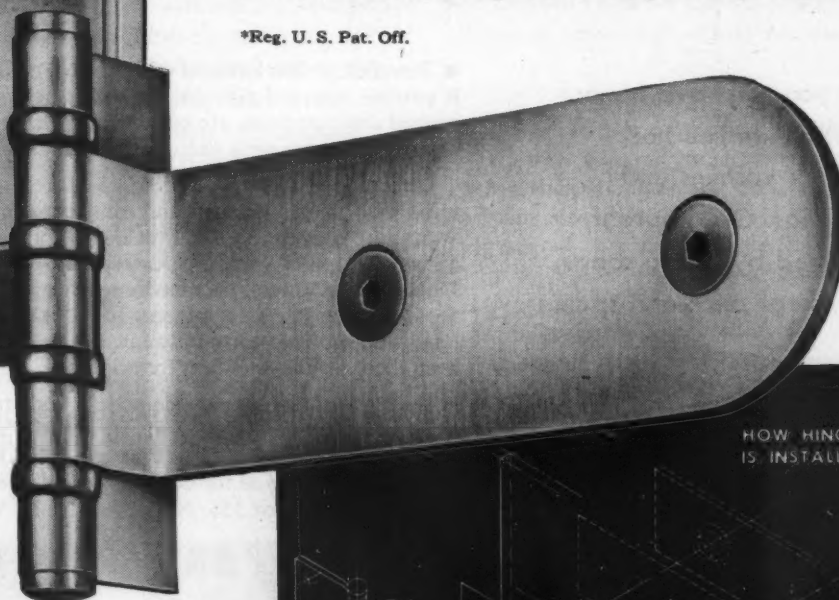
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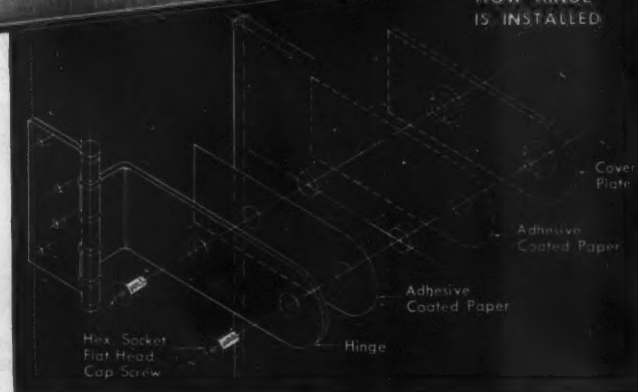
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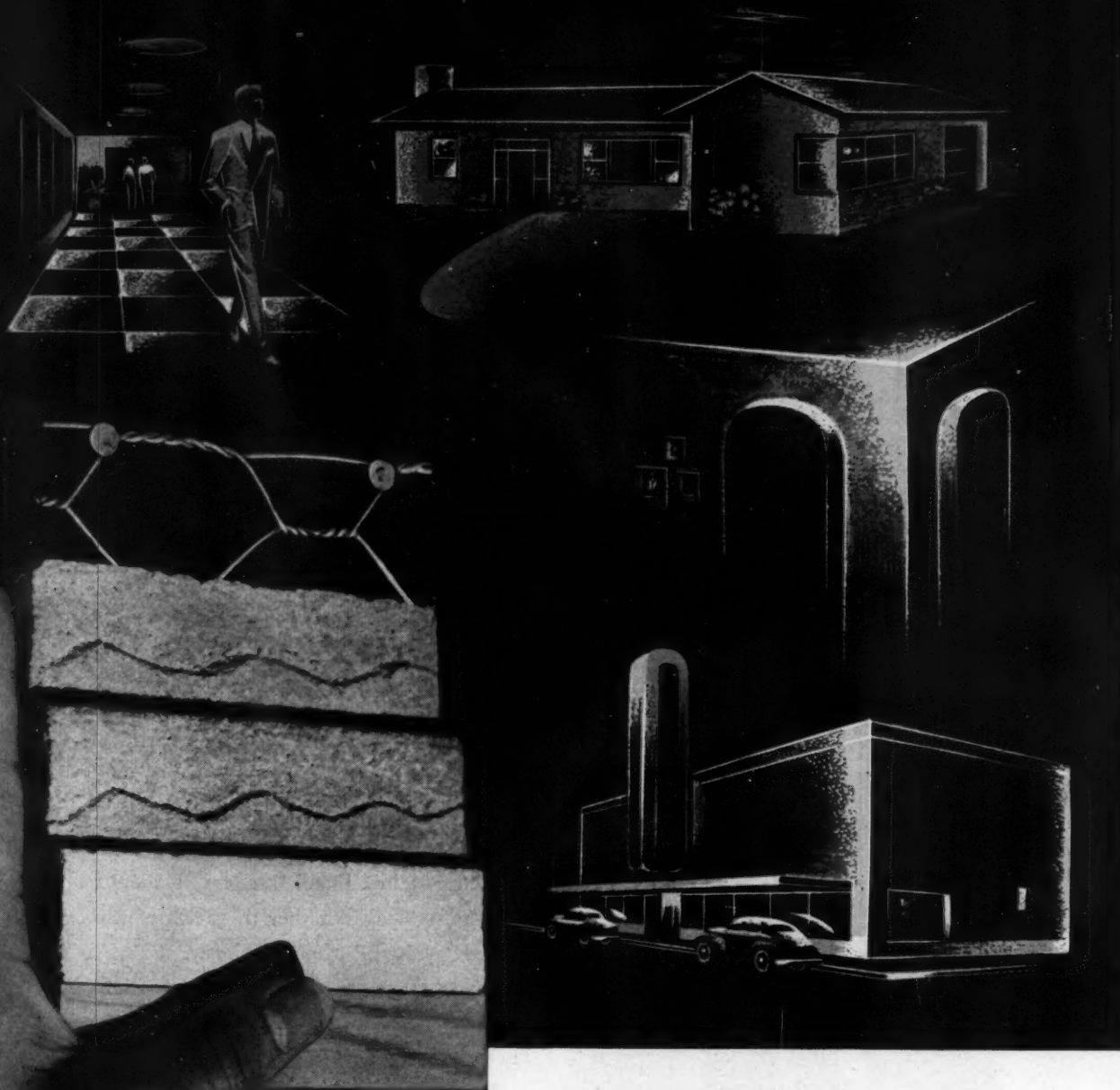


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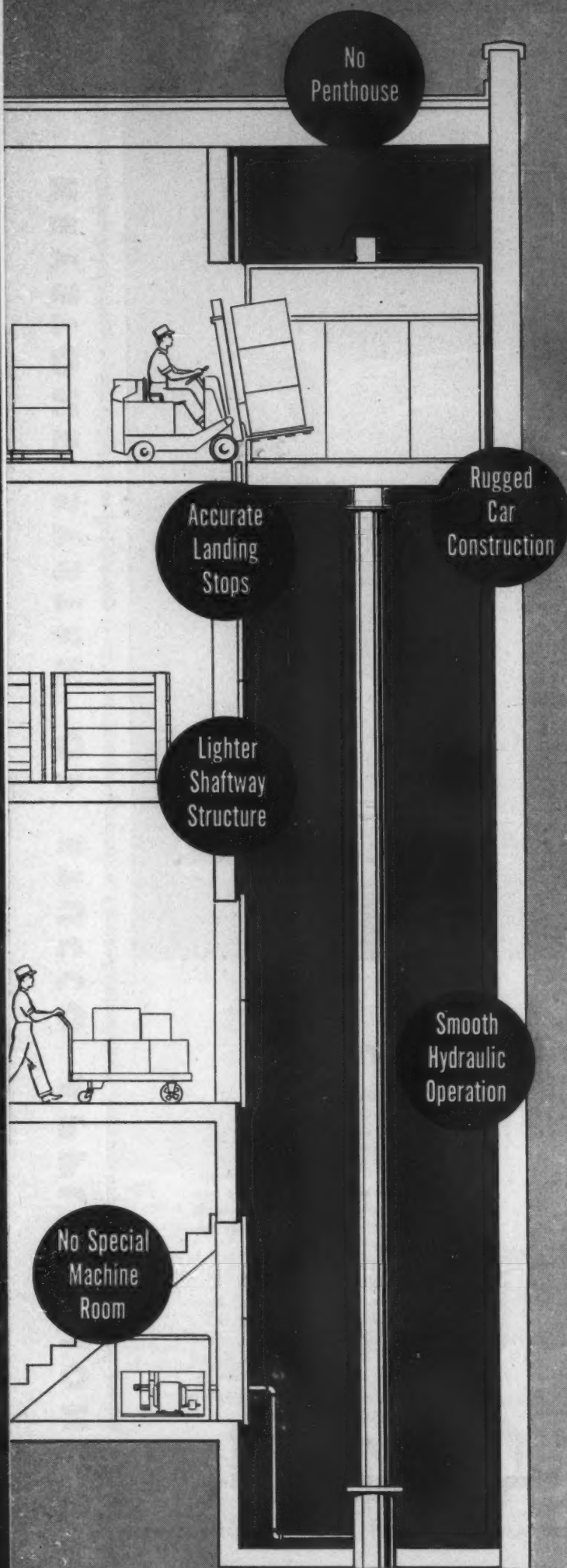
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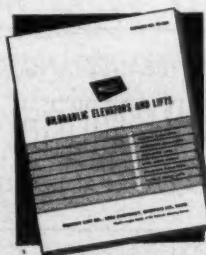
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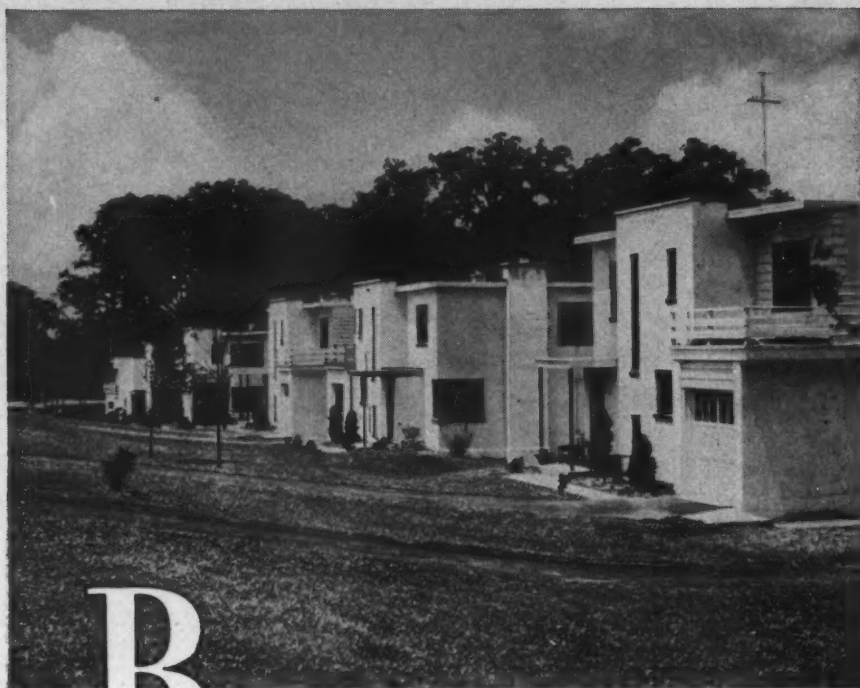
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Clean and bright as reflected sunlight, portland cement paint highlights the livableness of this Philadelphia housing development. Each home is equally attractive because Atlas White Cement, used to make the paint, is so *uniformly white*.

Atlas White Cement, being uniform in color and durability, is an important factor in producing a cement paint that enhances appearance and wears well in any climate. Properly applied on concrete, concrete masonry, stone, brick or hollow tile, it penetrates the pores, resisting moisture, dirt and dust. Moreover, it may be used in a full spectrum of colors because the true white of Atlas White Cement enhances the delicate tone values of pigments.

Leading cement-paint manufacturers recognize the uniformity and true whiteness of Atlas White. Their products give superior results, but whether you use a factory-prepared mix or job-mix your own paint, be sure it's made with Atlas White Cement.

For further information see SWEET'S Catalog, sections 4E/7a and 13C/5, or write to Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), 100 Park Avenue, New York 17, N. Y.

Architect & Contractor:
McCloskey Co.,
Philadelphia



FOR BEAUTY AND UTILITY
ATLAS WHITE CEMENT
®
FOR TERRAZZO, PAINT, SLABS, STUCCO

"THEATRE GUILD ON THE AIR" Sponsored by U. S. Steel Subsidiaries
Sunday Evenings—NBC Network

Architectural Engineering

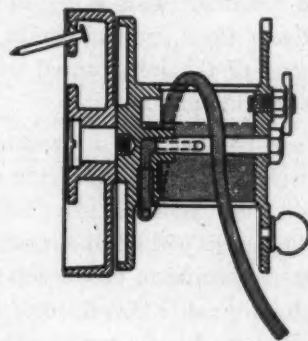
PRODUCTS

(Continued from page 200)

is said to enable easy installation or removal—eliminating the necessity of applying it over lining felt. Sloane-Blabon Corp., 295 Fifth Ave., New York 16, N. Y.

Leveling Instrument

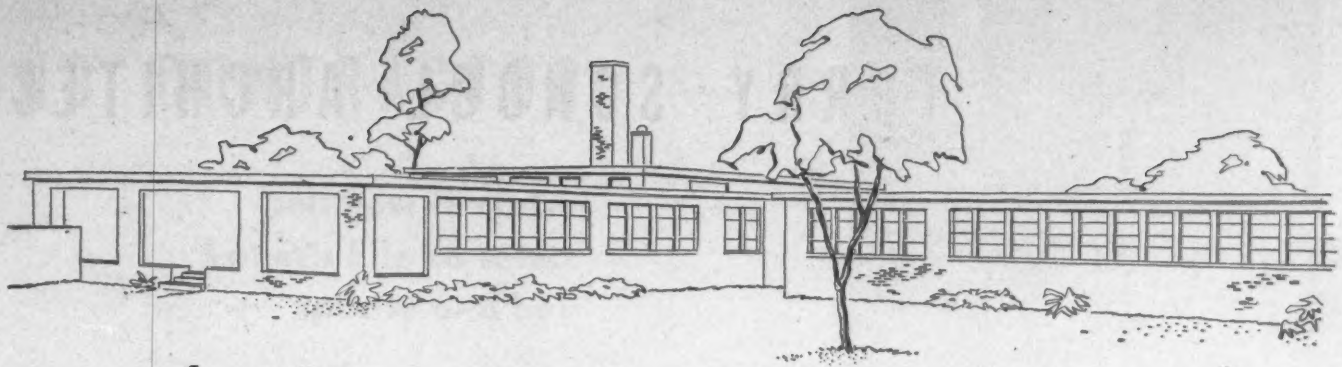
Hydrolevel, a leveling instrument designed for use in the construction field, is said to be based on a new application of the principle that a liquid seeks its own level. The unit consists basically of a combination reservoir and reel to which is attached a tube terminating in a level sight and marker. The manufacturer describes the operation as follows: When the reservoir-reel is hung or placed, the liquid level is established, and when the gauge line is matched with this level, all inscribed marks, being related to the same liquid level, are level with each other. Transparent material



Gravity principle of liquid is used to operate new level device

is used in the component parts so that the operator can see easily that enough liquid is in the reservoir, and that no large air bubbles are in the tube. With these precautions, and under normal conditions, level points are said to be quickly and accurately established. The device can be operated by one man, and since there are no sensitive parts or adjustments and no figures to be read, it is said to reduce to a minimum the chances for error. Construction is chiefly of aluminum alloy and plastics. *Hydrolevel*, 53 De Soto Ave., Ocean Springs, Miss.

(Continued on page 210)

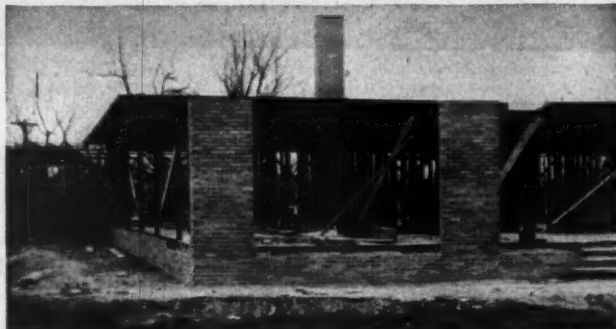


*Architect saves time and money
in new hospital construction with*

STRAN-STEEL® FRAMING



Interior view of Redfield (S.D.) hospital under construction. Stran-Steel framing comes pre-cut, pre-punched, treated with rust-inhibiting paint.



Exterior view of construction. Electrical wiring is installed through factory-punched holes in framing members.



Spick-and-span interior of the hospital shows how flush finishing of walls and doors lends convenience, promotes sanitation.

Architects are quick to recognize the many advantages of Stran-Steel *naillable* framing in commercial and industrial construction. Read what Mr. A. McWayne, of Perkins and McWayne, architects and engineers, Sioux Falls, S.D., says:

"We are well pleased with the Stran-Steel construction as incorporated in the hospital at Redfield, South Dakota . . . Stran-Steel offers many possible savings in time and cost of construction."

Mr. McWayne says that Stran-Steel framing permitted complete enclosure of the building to allow interior work to proceed before exterior completion. This means that sub-trades (electrical, plumbing and heating) were not held up waiting for bricklayers, concrete workers, etc., to finish their jobs. Man-hours were saved and costs held down.

If you are planning a school, hospital or industrial building, it will pay you to investigate Stran-Steel framing. Complete literature available on request, or see Sweet's catalog service, architectural ($\frac{25}{67}$) and builders' ($\frac{25}{67}$) files.

GREAT LAKES STEEL CORPORATION

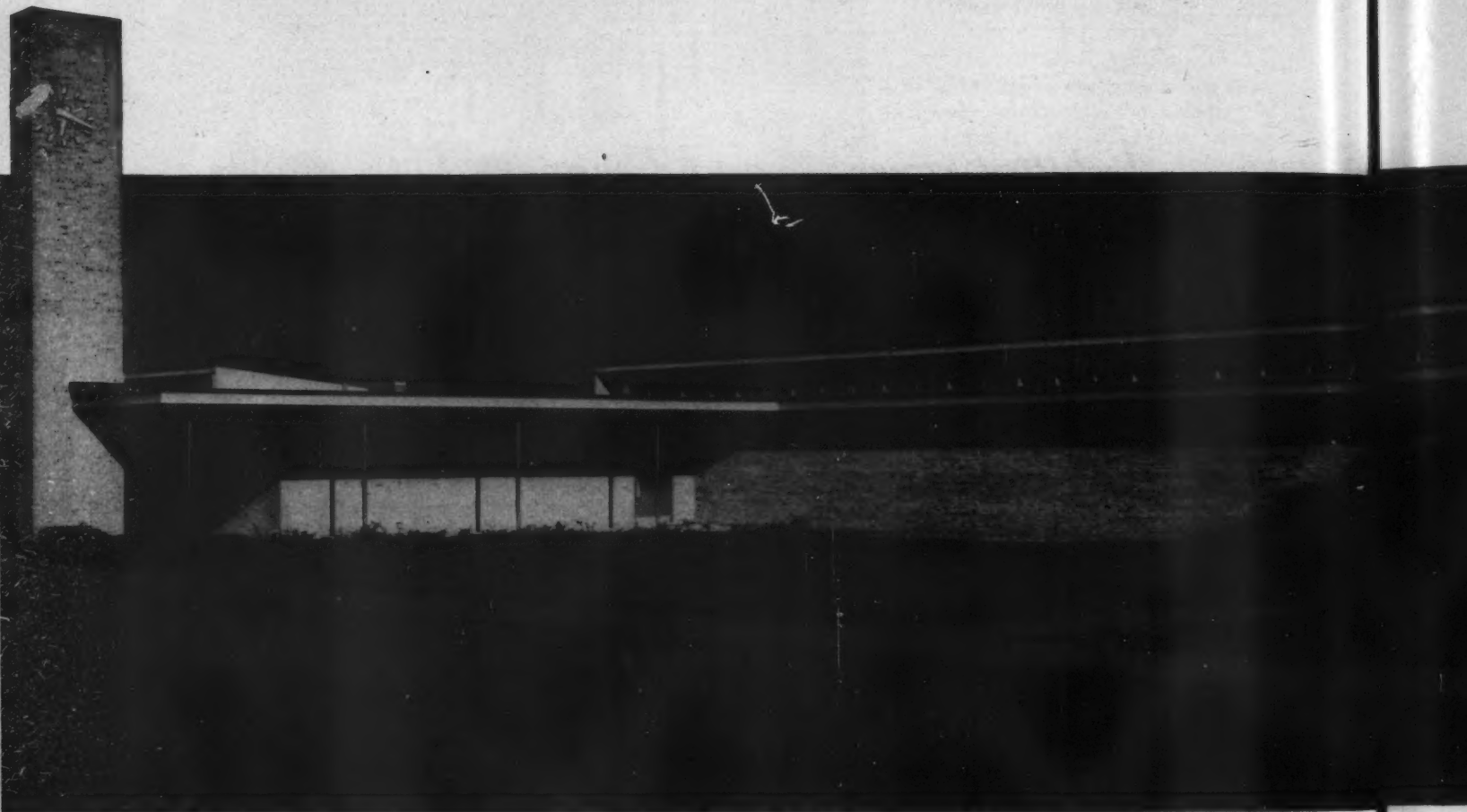
Stran-Steel Division

Ecorse, Detroit 29, Mich.

NATIONAL STEEL CORPORATION



TORRY SCHOOL ARCHITECT



Torry Elementary School
Birmingham, Michigan

Swanson Associates,
Architects

J. C. Nielsen Co.,
General Contractors

"... hardly could get along without it."

says J. R. F. Swanson

"We used Sweet's File constantly on the Torry School project, just as we do on all jobs in our office. Our draftsmen, specification writers and field superintendents hardly could get along without it. I cannot emphasize too strongly how much we need information on hundreds of items in this handy form. It just makes good sense for manufacturers to send us their catalogs in Sweet's. Many times we don't consider a particular make of product because we haven't time to dig up information on it.

"Sweet's File would be even better if we had more and better catalogs in the me-

chanical services sections — plumbing, heating, ventilation, air-conditioning and lighting. I know there are limits to the amount of detail a manufacturer should put in a catalog. What we need is enough to tell whether the manufacturer can give us what we want, so that we can then call them in to work out the job.

"Here is another suggestion. More and more, architects are becoming concerned with interior design. Well-designed catalogs on such items as floor and wall covering, fabrics and furniture would be helpful to us and also profitable to the manufacturers."



Sweet's

T AND CONTRACTOR

tell how they use
**Sweet's File to select
specify and buy**



J. R. F. Swanson
Swanson Associates, Architects
Bloomfield Hills, Michigan



Paul Nielsen
J. C. Nielsen Company
Royal Oak, Michigan

"More installation data needed."

says Paul Nielsen

"Sweet's File is our building products Bible, and our first source of information on all the products we buy. Whenever we need product information, in the office or out in the field, we turn to Sweet's immediately. We know that we usually can find out what we need to know about specified materials, and the name of the local supplier.

"Ours is a small firm, relatively speaking, and we have neither the staff nor the space to maintain an up-to-date file of the catalogs and throw-away sheets that are mailed to us. With practically all reputable manu-

facturers' catalogs right at our finger-tips in Sweet's, there isn't any reason to.

"One thing we would like to see more of in the catalogs in Sweet's is installation data. We really need clear-cut dimensions, photographs and drawings which will help our field men coordinate the work of the various trades. A good catalog, that tells you all you want to know and is easy to find your way through, makes a good impression. Where we have a choice of products that will do a specific job, we naturally turn to the product that is the easiest to get the dope on and the easiest to buy."

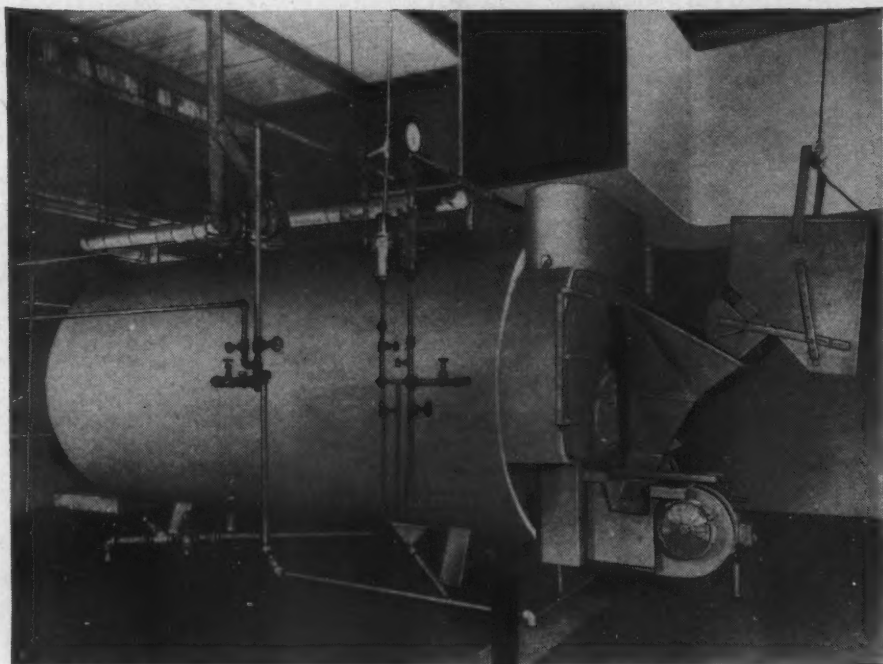
Catalog Service

DIVISION OF F. W. DODGE CORPORATION
119 WEST 40TH STREET NEW YORK 18, N. Y.

Enjoy



"Scotch" Economy for your power plant needs



Titusville

"SPS"
SCOTCH
MARINE

POWER BOILERS ARRANGED FOR STOKER FIRING

The low-cost operation of Titusville Scotch Marine Boilers derives from *built-in* high efficiency. Maximum efficiency—maximum utilization of heat input—design—construction—tried and true, over years of Scotch Marine production—these and many other basic advantages assure dependable operating economy. • Shown is a recent Canadian installation of a Titusville SPS 200 unit, 125 lbs. W.P., rated at 243 H.P. Titusville manufactures a complete line of high and low pressure fire and water-tube boilers to meet all capacity and pressure requirements. Write for Bulletin B-3075-A.

THE TITUSVILLE IRON WORKS COMPANY
TITUSVILLE, PA.

division of



Representatives in Principal Cities

Architectural Engineering

PRODUCTS

(Continued from page 206)

Plywood Wall Panel

Plankweld, pre-finished plywood wall panel which has been previously available only in birch and oak, is now being manufactured in Philippine mahogany and knotty pine. United States Plywood Corporation, 55 W. 44th St., New York 18, N. Y.

Mercury Vapor Floodlight

Designed for exterior use where concentrated high-intensity light is required, the *Nepo* mercury vapor floodlight is reported to incorporate design features which lead the manufacturer to recommend it for installations where such illumination has not been previously employed. Its successful applications cited include a variety of display and protective lighting installations as well as illumination of large areas and other such areas. The unit is available with a number of brackets and pole and clamp assemblies which are said to make



Mercury vapor floodlight is designed for high-intensity exterior use

it adaptable to a great many installations. It has a polished aluminum reflector spun over the glass bowl and permanently sealed to it, reportedly affording increased safety and cleanliness. The bowl is of outdoor crystal glass, the slipfitter and hood of cast aluminum. The unit is described as rustproof and weatherproof. It is designed for use with EH 1 and JH 1 color-corrected lamps, but when equipped with a special socket

(Continued on page 212)

FOR THE GYM-AUDITORIUM IN THIS RICHFIELD, MINNESOTA SCHOOL

Good Looks • Durability • Easy Maintenance



ELEMENTARY SCHOOL IN RICHFIELD, MINNESOTA

It's

STARK GLAZED FACING TILE

CLASSROOM IN SCHOOL, JACKSON TOWNSHIP, OHIO



It *looks* like a gymnasium—and it is. But here, on any school day, you could see hundreds of youngsters at assembly, at play, at indoor lunch.

That means it's a multi-purpose interior that must take plenty of punishment, *and shrug it off!*

Architects have designed it to do just *that*. For example: the walls. They are Stark's Glazed Facing Tile—resistant to the roughest usage, easy to clean and *keep* clean, never needing painting or redecorating!

Produced in modular sizes, Stark's Facing Tile builds a *wall and finish at one time*—goes up fast—saves construction time and cost.

Permanently glazed, Stark's Facing

Tile is adaptable to many uses. It is impervious to dirt and grease, is easily cleaned with soap and water, stands up under heavy school traffic, helps create ideal lighting conditions.

These same advantages of Stark's Glazed Facing Tile also make it the ideal material—both for new construction and remodeling—in industrial plants, hospitals, institutions, public and commercial buildings. See our Sweet's Catalog 4f-St.

OUR NEW BROCHURE on Modular Masonry is available to architects, engineers, contractors, building owners and administrators. It contains much valuable information, and will be sent free to you upon request. Write Dept. AR-11.



STARK CERAMICS, INC.

(formerly The Stark Brick Co.)

Canton 1, Ohio

14305 Livernois Avenue Detroit 4, Michigan
15 East 26th Street New York 10, N. Y.

PRODUCTS

(Continued from page 210)

bracket may be used with the AH 1 lamp. Nepo Manufacturing Company, 527 So. Wells St., Chicago 7, Ill.

Volume Ventilator for Schools

The *Trane Volume Ventilator*, a large capacity heating and ventilating unit designed for use in auditoriums, gymnasiums and other large spaces requiring

tempered ventilating because of high occupancy, is now available in three basic types—floor, wall, and horizontal ceiling models. The ventilator is reported to be able to introduce, filter, heat and distribute up to 13,500 cfm of outside air. Fan and coil, filter, mixing box and discharge plenum are separate sections designed and built for use together which may be combined variously. This plus the availability of a variety of optional equipment such as mixing boxes, wall intake boxes and outlet grills is said to make the unit adaptable to a wide variety of installations. Stand-



Volume ventilator is designed for large high-occupancy locations

NO-SHOK
Safety Duplex
Receptacles

installed throughout
3010 UNIT
HOUSING PROJECT

Park Forest, Illinois

When the additional 3,000 home units now under construction are completed, this suburban community will have a population of 25,000, approximately half of which will be children. To safeguard these thousands of youngsters, American Community Builders have installed NO-SHOK Safety Duplex Receptacles.

No-Shok Safety Duplex Receptacles afford added protection to property and lessen fire hazards by keeping out metal objects, dust, water, etc.—prevent shocks and burns—save lives. Specified by leading architects and engineers all over the U.S. for civilian housing projects, industrial and farm installations and Army and Navy housing. R.E.A. approved.

Sold through leading electrical wholesalers.
Write for particulars today!

BELL Electric Company

Dept. A, 1844 West 21st Street • Chicago 8, Illinois

AMERICAN COMMUNITY BUILDERS, INC.
TWO FLATS
PARK FOREST, ILLINOIS
April 11, 1951

Bell Electric Company
1844 West 21st Street
Chicago 8, Illinois

Gentlemen:

In large housing projects like ours in Park Forest, the safety features of your NO-SHOK wall outlets play a major role in safeguarding life and property.

Among the 12,000 occupants of the 3,010 rental units we built two years ago are several thousand children. To date, there has not been a single case of shock, burn or short circuit due to insertion of hairpins, wires and other metal objects as often happens with ordinary electrical outlets.

Because of the extra safety and protection, we are also installing NO-SHOK SAFETY WALL outlets in the 3,000 home units now under construction in Park Forest.

Yours very truly,
Joseph Goldstein
Vice President

ard equipment includes the manufacturer's non-freeze steam heating coils which are said to guard against freeze-up and to provide even heating and rapid elimination of condensation. Trane Company, La Crosse, Wis.

Automatic Illumination Control

Described as being both weatherproof and simple, the *Model 1089 Weston* plug-in illumination control is now available. The unit is said to provide fully automatic "on-off" control of artificial lighting at predetermined light levels, eliminating the need for human



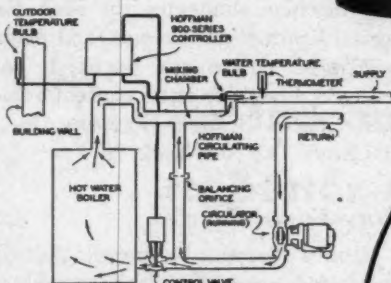
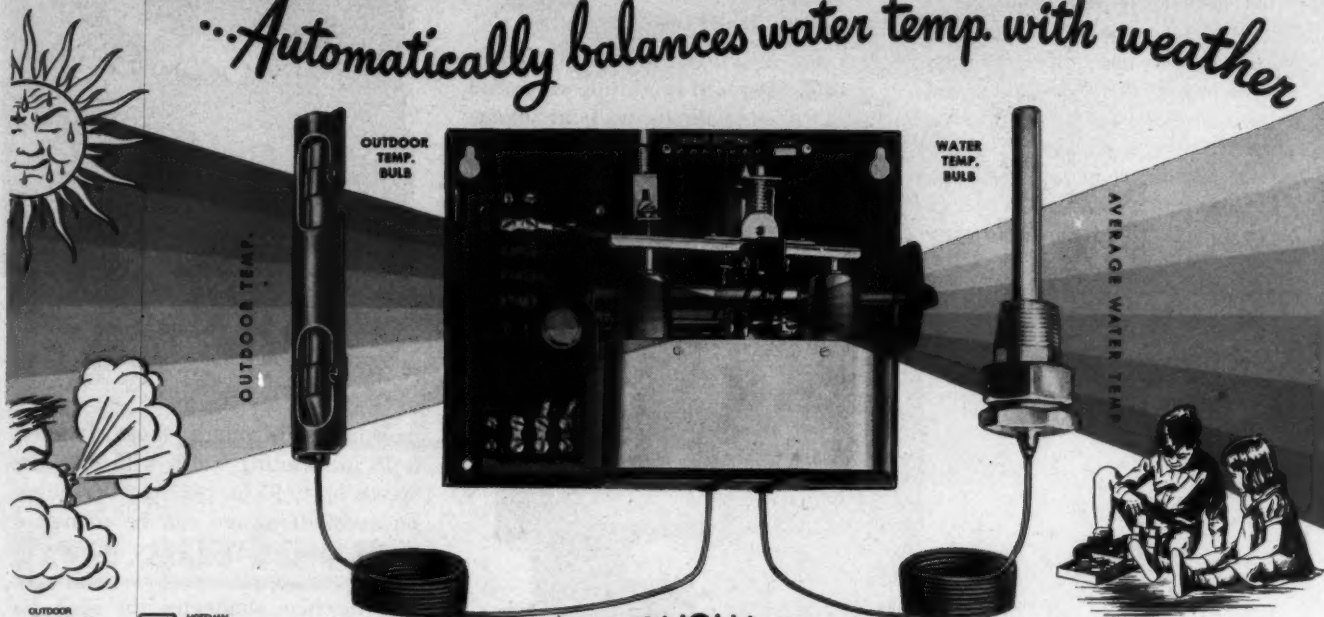
Plug-in control for light installations is completely automatic

judgment and arbitrary time schedules. It is recommended by the manufacturer for street, industrial and sign lighting, as well as for controlling lights on obstruction markers, airway beacons and air strips. Mounted in a standard weatherproof watt-hour meter glass case, the unit consists of a stable dry-disc type photocell, a sensitive relay which is

(Continued on page 214)

PANELMATIC CONTROLLER

...Automatically balances water temp. with weather



HOW THE HOFFMAN PANELMATIC SYSTEM COMBINES CONTINUOUS CIRCULATION WITH WATER TEMPERATURE CONTROL

When the Control Valve is closed, continuously circulating water bypasses the boiler without withdrawing heat. When water has lost heat, or cooled by the Water Temperature Bulb, the Panelmatic Controller slowly opens the Control Valve, permitting hot water from the boiler to enter the circulating stream. When sufficient hot water has been admitted to restore the proper temperature to the circulating water, the Valve is closed by the Controller. This cycle repeats automatically in balancing water temperature to weather changes.

CONTINUOUSLY CIRCULATED HOT WATER SYSTEM

Designed especially for AUTOMATIC HOT WATER

The Hoffman Panelmatic Controller is based on the fact that for every Outdoor Temperature there is a corresponding Supply-water Temperature, which must be *automatically maintained* in the heating units. The correct Supply-water Temperature, in the case of a panel heating system, or the output per sq. ft. EDR in the case of other forms of radiation, must be specified by the Architect or Engineer for one Outdoor Temperature. The Controller then *automatically* adjusts the Water Temperatures to balance any other outdoor conditions encountered. The following table illustrates several sets of conditions for a panel heating system.

Architect or Engineer to Specify			Factory Sets Controller		Controller Automatically Furnishes Supply Water at Temperatures Correct for Any Outdoor Temp. as Listed Below				
Design Temp. °F.	Supply Water °F.	Room Temp. °F.	Scale No.	Supply Water °F. at Outdoor 32 °F.	Outdoor Temperature °F.				
					-10	0	+10	+30	+50
					SUPPLY WATER TEMPERATURE °F.				
-10	150	70	11	108	150	140	130	110	90
0	150	70	13½	114	—	150	139	116	94
+10	140	70	14	115	—	—	140	117	94
-10	140	70	9	104	140	132	123	106	88
-10	160	70	13	113	160	147	137	115	92

When the outdoor temperature reaches 65°F., the Circulator automatically stops. The 65° factory setting was chosen because it is the basis for calculating degree days. If a different cut-out temperature is desired, it can be easily adjusted to individual requirements. Occasionally the actual heat loss differs from the calculated loss due perhaps to changes in construction. The Panelmatic Controller can be easily re-adjusted after installation according to simple, definite instructions furnished by the factory. Technical literature describing the Panelmatic System and sample specifications, gladly furnished on request.

HOFFMAN SPECIALTY COMPANY, Dept. AR-4
1001 York St., Indianapolis 7, Ind.

PIONEERED BY HOFFMAN

HOFFMAN PANELMATIC

Hot Water System Controls

PRODUCTS

(Continued from page 212)

operated directly by the photocell, a clock motor, mercury switch and limit switch. It has no phototubes, vacuum tubes, resistors or capacitors, and is said to require no stand-by power, drawing no current between on and off operations. Installation requires only plugging the unit into a standard watt-hour meter receptacle. It is reported to with-

stand adverse climatic conditions and to function at temperatures from 140 to -30 deg F. Weston Electrical Instrument Corp., 641 Frelinghuysen Ave., Newark 5, N. J.

Copying Machine

A new *Bruning Copyflex* copying machine features a wide printing width said to suit it especially for medium volume production of prints from tracings, engineering drawings, and other large-sized technical originals. The price is said to be lower than that of any other such



Copying machine features wide width to accommodate large drawings

built to
STAND MORE

...than they'll
ever have to take...

KEWAUNEE
LABORATORY EQUIPMENT

We show you this picture of an actual demonstration merely to point out that Kewaunee doors are so strong—so ruggedly built—they support the weight of a man!

This is typical of *all* Kewaunee construction. Doors, drawers, and framing members are *extra* husky to keep *your* Kewaunee installation in top condition for years to come. And that's just one more reason why Kewaunee Laboratory Equipment leads the field in technical excellence and value!

Write today for free Kewaunee catalog, indicating whether interested in wood or metal construction. No obligation.

Kewaunee Mfg. Co.
J. A. Campbell, President
5046 S. Center Street, Adrian, Michigan

Representatives in Principal Cities

machine in its volume range. It offers a 46 in. printing width with exposure speeds up to 95 in. per min. It requires no installation, and can be connected directly to a 60 cycle, 115 v AC line. 50 and 25 cycle machines are also available. The machine eliminates the need for special lighting, dark rooms, and extra ventilation or exhaust ducts. It reproduces directly from translucent originals. Charles Bruning Company, Inc., 100 Reade St., New York, N. Y.

Viny-Fused Fabrics

Fabrics that can be draped, pleated and folded, reportedly without cracking, but which have the wearing properties of plastic are now available. It is said of the fabrics that they will not scuff or fray and that they clean easily when



Plastic fabric (inset) is designed for use as wall covering

wiped with a damp cloth. Two patterns, *Madagaska* and *Bambu*, reproduce the texture of Madagascar straw and woven bamboo. Available in a variety of colors. L. E. Carpenter and Company, Inc., 130 W. 42nd St., New York 18, N. Y.

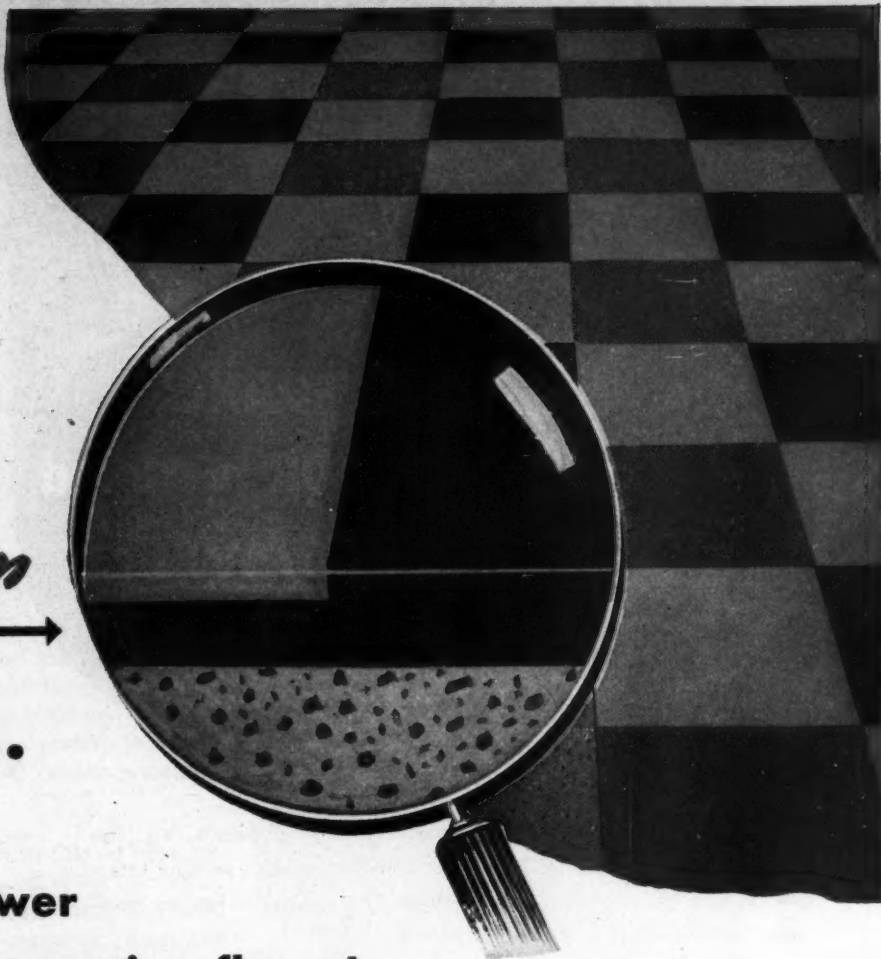
(Continued on page 216)

Look

Under →

the surface...

**...for the answer
to better decorative floors!**



**Flintkote Mastic Flooring
Underlayments will give you
all the advantages you want**

Under decorative floors—you want resilience!

You want a smooth, level base . . . resistance to shock . . . resistance to moisture.

You want effective *sound deadening*.

And you can get all of these advantages with flooring underlayments made with Flintkote Mastic Binders.

There are several different formulations of these mastics . . . asphalt- or rubber-bearing types.

These mastic underlayments can be laid in thick or thin sections. The ideal base or level-

ing course for old or new floors.

They're lightweight, resilient—quickly and easily troweled over almost any clean, firm surface.

(For the HEAVY-DUTY requirements of work areas, be sure to get cold-laid Asphalt Mastic Floors made with Flintkote Flooring Emulsions.)

We'll be glad to send you complete information about these quality flooring products. Simply write:

THE FLINTKOTE COMPANY, Industrial Products Division, 30 Rockefeller Plaza, New York 20, N. Y.

Atlanta • Boston • Chicago Heights • Detroit
Los Angeles • New Orleans • Washington

The Flintkote Company of Canada, Ltd.,
30th Street, Long Branch, Toronto, Canada.

FLINTKOTE *Products for Industry*





PARKAY Haddon Hall Pattern Hardwood Floor Completed in 2½ Hours

The place—Hunt Room at The Cavalier, Virginia Beach, Va. The problem—install a 14' x 14' hardwood dance floor without interruption to regular dining room service. The solution—Parkay Haddon Hall Pattern (basketweave) flooring.

Three workmen began operations immediately following the breakfast period. First, the carpet area was removed. Then the 12" x 12" units of Parkay Haddon Hall oak flooring were applied with special adhesive over the terrazzo floor. Two and one-half hours later the beautiful patterned hardwood floor was ready for dancing feet—and customers were enjoying luncheon in an immaculate dining room.

Parkay Features That Speed Work — Save You Money

Every feature of Parkay Haddon Hall Pattern (basketweave) flooring makes for fast, clean installation. It comes to the job in easily handled 12" x 12" beveled-edged units composed of 2" x 4" and 2" x 2" solid blocks 1" thick. The beautiful, lasting factory-finish eliminates messy, time-consuming, on-the-job finishing. No sawing or nailing. Parkay is applied with Special Adhesive over any sound subsurface—wood, cement, terrazzo.

For beautiful, low cost, lifetime hardwood flooring that can be installed in hours instead of days, investigate Parkay Haddon Hall. Light and medium finish Oak, Walnut, Avodire, Mahogany or Teak. Write for descriptive literature. Parkay, Inc., 5002 Crittenden Drive, Louisville 9, Ky.



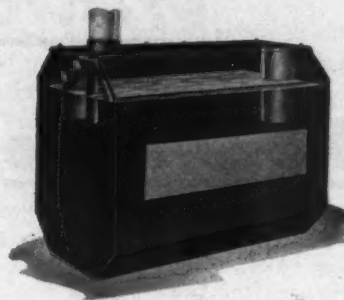
Architectural Engineering

PRODUCTS

(Continued from page 214)

Septic Tank

Said to meet all requirements of the new Commercial Standard CS 177-51 recently accepted by the U. S. Public Health Service, FHA, VA and many state and local health authorities, the model 1050 *San-Equip Master* septic tank is now available. Horizontal in



New horizontal design metal septic tank features ease of maintenance

design and made of heavy 14 gauge steel with electrically welded seams, the tank is designed with a length twice the width and with a 4 ft liquid depth. These are said to be the proportions considered most satisfactory for the thorough settling out and digestion of solids. Of 500 gal. capacity, it has an access opening at the top to facilitate inspection and permit pumping out without costly digging. Intake and outlet openings located at the ends are said to be baffled to reduce the possibility of clogging. Another feature conforming to the new standards is a bituminous emulsion coating on the inside, which is in addition to a heavy hot-dipped mineral asphalt coating applied both inside and out. San-Equip, Inc., East Brighton and Glen Aves., Syracuse 5, N. Y.

Hardwood Block Flooring

Medley Block, made of selected hardwood bonded to 30 lb asphalt-impregnated felt membrane, is said to be unusual in that it is flexible in both directions, which allows it to fit down firmly over minor imperfections in a subfloor. Designed primarily to be laid on con-

(Continued on page 218)

INSULITE® Leadership in Cleveland...

Survey shows DEALERS PREFER INSULITE 4 to 1
over next leading brand of insulating sheathing



A recent impartial survey in Cleveland showed an overwhelming majority of dealers preferring INSULITE BILDRITE SHEATHING. The reason is builder demand . . . Cleveland builders are getting better sheathing jobs at a lower cost with BILDRITE. Here's how Al Tepper, prominent Cleveland dealer, explains it:

"We prefer INSULITE BILDRITE SHEATHING because most of our contractor-customers ask for it by name. They've found that BILDRITE gives them the best sheathing on the market—and many of them are saving more than \$200.00 per job by using BILDRITE instead of horizontally-applied wood sheathing. For example, Thomas W. Giles, one of my best builder-customers, has saved \$286.00 on one house he is now constructing. And, he also prefers BILDRITE because it's waterproofed throughout and therefore doesn't warp or buckle on the job.

"Many of my customers are saving an additional \$20.00 on every job by eliminating corner-bracing with BILDRITE SHEATHING. That's because 4-foot BILDRITE was the first insulating sheathing to be accepted by F.H.A. for use *without* corner-bracing."

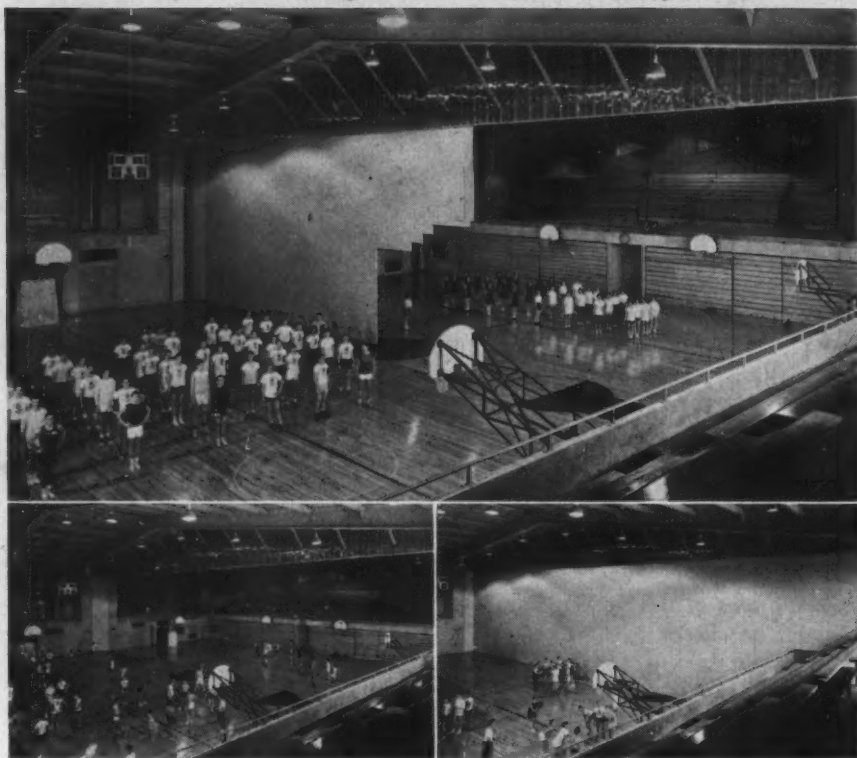


More and more architects, everywhere, are passing INSULITE's savings and other advantages on to their clients by specifying BILDRITE SHEATHING. May we arrange to show you samples and give you complete information about BILDRITE and other quality INSULITE products? Just drop us a card at the address below.



INSULITE DIVISION • Minnesota and Ontario Paper Company
Minneapolis 2, Minnesota

Take a tip from Hinsdale High!



Stretch both space and appropriation with FoldeR-Way® Automatic FOLDING PARTITIONS by Richards-Wilcox

In these photographs taken at Hinsdale Community High School, Hinsdale, Ill., you can readily see how Richards-Wilcox FoldeR-Way folding partitions provide greatest flexibility to given areas of space. You can see how the partitions close to isolate the boys' and girls' gym classes from each other. Also, how the FoldeR-Way partition opens for conference games, and similar events, making the complete gym one vast playing arena and gallery.

But you can't see these EXCLUSIVE FEATURES:

1. **Fully Automatic.** All folding, unfolding, locking, unlocking, and sound-proofing operations are accomplished by the electric operator and its auxiliary mechanism. You merely turn the switch key—R-W does the rest.
2. **Positive, Silent Action Roller Chain Drive.** Will not slip, stretch, or break.
3. **Friction-Proof Track.** Ball-bearing hanger wheels are machined to provide a line contact with the $\frac{3}{8}$ " round cold-rolled steel bar runways of the track, assuring minimum friction and silent operation.
4. **Gymnasium Doors Are Full Three Inches Thick Over Entire Area.** This provides flush surface similar to a solid wall. Eliminates protruding butt-hinges in players' contact zone below seven foot level.
5. **Fully Automatic Floor Seals.** Self-adjusting to uneven spots in floor. No levers or manual effort required to operate.

For further information about R-W FoldeR-Way Automatic Folding Partitions, write, phone or wire our nearest office.

See an R-W FoldeR-Way Automatic Partition in operation at any of the Schools in the partial list at right, or write for address of installation nearest you:

Kent State University, Kent, Ohio—Opening: 114' x 20'
Hinsdale Community High School, Hinsdale, Ill.—Opening: 127' x 28'
Arvin High School, Arvin, California—Opening: 143' x 26'
Kinkaid School Gymnasium, Houston, Texas—Opening: 71' x 21'
High School, Brookline, Mass.—2 Openings: 100' x 20' and 130' x 20'
Banks School, Bay City, Michigan—Opening: 50' x 18'



Architectural Engineering

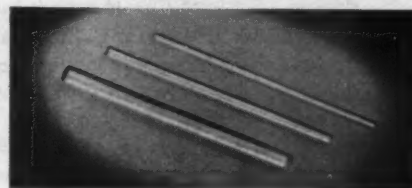
PRODUCTS

(Continued from page 216)

crete slab and plywood subfloors, it is applied in the conventional manner with cold mastic. The blocks are manufactured in two sizes, 10 by 10 by $\frac{5}{16}$ in., and 9 by 9 by $\frac{13}{16}$ in. H. G. MacDonald Co., Monrovia, Calif.

Plastic Rods

Dynakon-F, described as a high tensile strength material with above-average electrical and corrosion-resistant properties, is the material from which plastic



Plastic rods may be used as insulators or as structural members

rods in fractional sizes are now being manufactured. The rods are recommended for use as stand-off insulators, tension rods, supports in chemical equipment and structural members in corrosive atmospheres. They are said to be resistant to acid and mild alkalis as well as to salts and most organic solvents. Among electrical properties cited are resistance of 120 sec ASTM, dielectric strength of 280 v per mil, and power factor of 2.5. Dynakon Corporation, 5509 Hough Ave., Cleveland 3, Ohio.

Vaporizing-Type Oil Burner

A new development in vaporizing-type oil burners is announced by the Oran Company of Columbus, Ohio. Called the *Dual-Air*, the product is said to feature a new method of introducing air to the burner which reduces draft requirements as much as 20 per cent on natural draft and 67 per cent on forced draft. Approved by Underwriter's Laboratories, it is reported to be clean-burning, with almost total absence of soot. According to the manufacturer the new development combines the simplicity and low cost of vaporizing-type

(Continued on page 220)

By choosing a KOPPERS ROOF— *Ford* bought for the future!



Ford's new plant, at Hamburg, New York, is protected by a Koppers Built-Up Roof. The roof is over a million square feet in area, and is bonded for 20 years.

Architect: Albert Kahn Associates, Detroit, Mich.
General Contractor: Bryant & Ditwiler Co., Detroit, Mich.
Roofing Contractor: Arrow Sheet Metal Works, Inc., Buffalo, N. Y.

"BUY FOR THE FUTURE"—that's what the Ford Motor Company tells its customers. And Ford followed its own sound advice . . . bought a Koppers Roof for its new stamping plant at Hamburg, New York. Koppers has *guaranteed* the performance of the roofing materials

in this huge roof for 20 years.

Koppers Roofs are famous for the way they last. And it's not surprising! For these roofs are built-up with layers of Koppers Approved Tarred Felt, cemented together with Koppers Old Style coal tar pitch, to form a continuous skin over the entire roof deck.

The felt imparts elasticity and tensile strength to the roof membrane. The pitch provides the element that enables Koppers Roofs to

resist prolonged contact with water *without deteriorating*, and makes Koppers Roofs self-sealing if small breaks occur. Together, Koppers Old Style Pitch and Approved Tarred Felt make an unbeatable roofing combination.

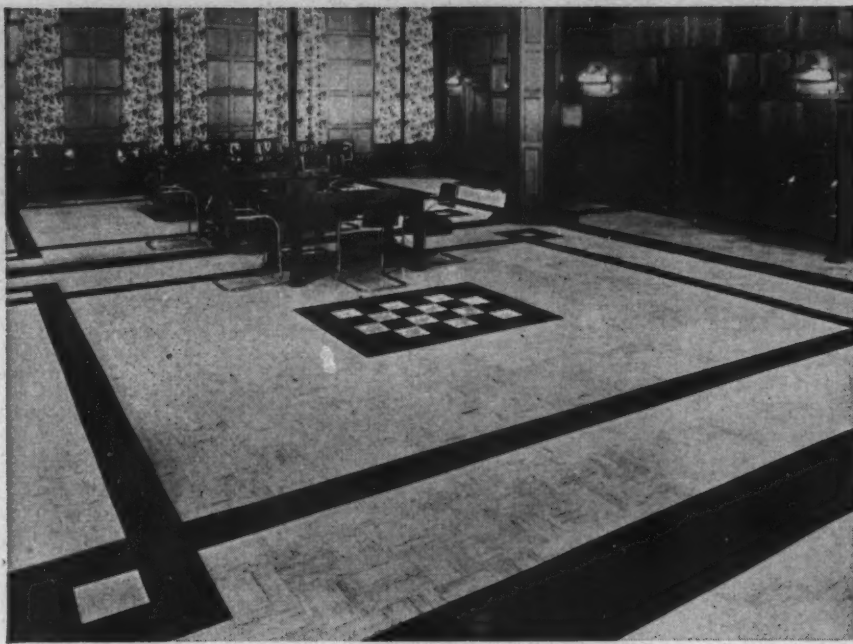
Koppers Roofing Materials are available from coast-to-coast. Specify these materials, and your projects will have the best in built-up roofing. For full information and specifications, get in touch with us.



KOPPERS COMPANY, INC., Pittsburgh 19, Pa.

DISTRICT OFFICES: BOSTON, CHICAGO, LOS ANGELES, NEW YORK, PITTSBURGH AND WOODWARD, ALABAMA

• SPECIFY KOPPERS FOR LONG-LIFE ROOFING •



HOW WILL THIS FLOOR LOOK TWENTY YEARS FROM NOW?

That's a question you, as an architect, should ask yourself *before* you write specifications.

And you can be sure of the answer if you specify Wright Rubber Tile by name.

Why? Because hundreds of installations of Wright Rubber Tile have seen severe service for twenty to thirty years. They are still in service today, and they still look almost new.

Samples from some of these floors have been measured for wear, and these measurements indicate a life of at least a hundred years.

What greater proof could you want? No laboratory tests—no glib promises—can take the place of proof like this.

Your clients pay you to know—not to guess! Consider this proof the next time you specify a floor—and you will specify Wright Rubber Tile!

FREE SAMPLE KIT FOR ARCHITECTS

Write today, on your letterhead, for a complete set of 4" x 4" samples of Wright Rubber Tile in 21 beautiful colors.

WRIGHT MANUFACTURING CO.
5204 Post Oak Road • Houston 5, Texas



FLOORS OF DISTINCTION

- ♦ WRIGHTEX—Soft Rubber Tile
- ♦ WRIGHTFLOR—Hard Surface Rubber Tile
- ♦ WRIGHT-ON-TOP Compression Cove Base

Architectural Engineering

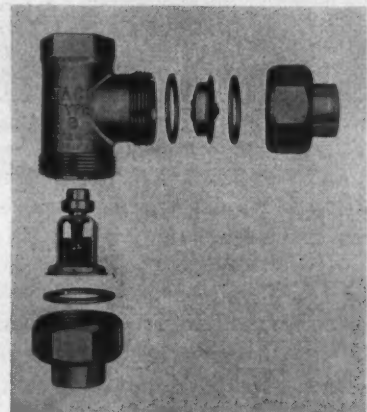
PRODUCTS

(Continued from page 218)

burners with advantages of more expensive types. Fuel savings of as much as 15 per cent are claimed, with improved pilot operation. The new burner will be incorporated in all the manufacturer's oil-fired floor furnaces and central heating systems, as well as in a new oil-fired conversion unit soon to be placed into production. Oran Company, 2222 So. Third St., Columbus 7, Ohio.

Tempering Valve

A new model *Taco Tempering Valve*, said to be an improved version of a previous model, is now available. Factory-set, the valve delivers water to faucets or plumbing fixtures at a temperature of approximately 140 deg F. It is supplied in two sizes, $\frac{1}{2}$ and $\frac{3}{4}$ in., and is described as suitable for most residential as well as small commercial installations. It is recommended for



Tempering valve is factory set, delivers water to faucets at 140 deg F

dishwashing machines, since it is claimed to prevent high temperature from baking food particles on dishes. It employs a hermetically sealed thermostatic element which avoids the use of bi-metal, liquids and bellows, and is reported not to leak, corrode, tire or fatigue under normal service. The one-piece element is said to be easily replaced in a matter of minutes. Taco Heaters, Inc., 137 South St., Providence 3, R. I.

(Continued on page 222)

SAVE THE HOT AIR!

McQuay DOWN FLOW UNIT HEATERS

Save the hot air ordinarily wasted in buildings with high ceilings with a McQuay Down Flow Unit Heater. These vertical unit heaters have the famous Ripple-Fin Coils—providing peak heating efficiency—will lower your heating costs by circulating evenly and gently this normally wasted stratified air.

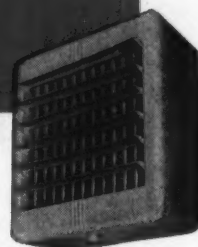
There are 22 Down Flow Units available to meet your exact requirements. Capacity range from 25,400 to 500,000 Btu per hour. Four styles of directional air diffusers are available to provide any desired air distribution.

Consult the McQuay representative in your city, or write McQuay, Inc., 1605 Broadway St. N.E., Minneapolis 13, Minnesota.



PROVED AND PREFERRED FEATURES!

- RIPPLE-FIN CONSTRUCTION
- DISTINCTIVE STYLING
- NON-FERROUS COIL
- STEAM OR WATER
- CERTIFIED RATINGS
- EFFICIENT PERFORMANCE
- MAXIMUM AIR THROW
- QUIETNESS RATINGS
- LONG LIFE



HORIZONTAL UNIT HEATERS



These unit heaters are offered for normal applications where horizontal air flow is desired. In 24 sizes with capacities ranging from 20,300 to 360,000 Btu per hour.

BLOWER TYPE UNIT HEATERS

For effective heat distribution over large open areas. Available in 8 sizes . . . in suspended and floor models, with one and two row coils; capacities from 20,600 to 1,600,000 Btu per hour.

McQuay INC.

HEATING • AIR CONDITIONING • REFRIGERATION

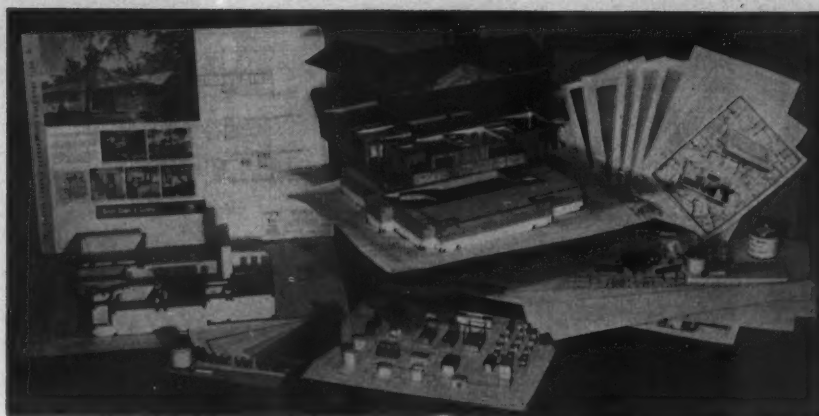


PRODUCTS

(Continued from page 220)

Architectural Scale Model Building Kit

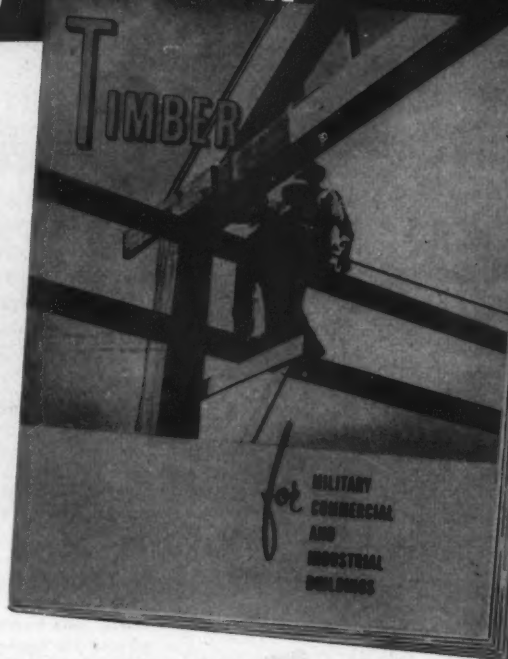
An aid to architects, builders or prospective home owners is now available in the *Hoyt Rust Scale Model House Kit*. It is claimed that an accurate model of almost any style of building can be constructed on a blueprint or drawing,



New kit devised as means of building inexpensive architectural models

There's plenty of timber

for **BOTH**
DEFENSE
AND
CIVILIAN
NEEDS



And timber fabricators in all sections of the country are ready to serve you.

Our 20-page booklet "Timber for Military, Commercial and Industrial Buildings" illustrates the many types of jobs now being built with the Teco connector system, glued-laminated construction and Lamella construction.

Here in pictures you'll see stores, markets, factories, warehouses, garages, hangars of the type that are being built now.

Specify timber—there's plenty of it and ready as usual for early delivery.

TIMBER ENGINEERING COMPANY, 1319-18th St., N.W., Washington 6, D. C.

Please send me FREE copy of "Timber for Military, Commercial and Industrial Buildings."

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Company.....

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City.....

State.....

AR

which may be set in the bottom of the box in which the kit comes. The model is scaled to $\frac{1}{4}$ in. equals 1 ft. Walls and partitions are made of ten-ply cardboard strips, cut to scale for an 8 ft ceiling. These are held in place by metal clips. Simulated doors and windows are provided, along with details of three roof pitches. Sheets of brick, stone masonry, siding and shingles are also included to finish the outside of the house. Simulated fireplaces, corner cupboards and shutters are also helpful, and there are 32 pieces of furniture plus bath and kitchen equipment to help in the placement of doors and windows. Hoyt Rust, 173 Marion St., Denver 3, Colo.

Glass in Construction

A new building designed by Lacy, Atherton and Davis, Architects, for the Port Allegany plant of the Pittsburgh Corning Corporation, employs some of the company's own glass products in its construction. Of special interest is the use of prefabricated cellular glass insulated sandwich wall units, consisting of two veneers of concrete with a core of *PC Foamglas*, a cellular glass insulation which is also being used alone for the insulation of the roof. These units will be cast in-the-flat on the building site and erected on the building's steel skeleton in various sizes, generally 12 by 4 ft sections. Some units are being cast with glass block panels in place. This construction method is expected to reduce cost, shorten construction time, and effect space savings within the structure. The building houses the company's Research and Development Division, Engineering Department, storage facilities and a machine shop. Pittsburgh Corning Corp., 307 Fourth Ave., Pittsburgh 22, Pa.

(Continued on page 224)

Kentile walls provide important long-range economies



The following literature is available on request and is designed to aid in the specifying of floors and walls for residential, commercial or industrial building or remodeling.

- | | |
|---|---|
| <input type="checkbox"/> Architects Specifications | <input type="checkbox"/> Kentile in Schools |
| <input type="checkbox"/> 16 Page Catalog—includes 4-color photos of Kentile installations | <input type="checkbox"/> Kentile in Hospitals |
| <input type="checkbox"/> Color Line Folder | <input type="checkbox"/> Recommended and Not Recommended Uses for Kentile |

Please write the Kentile, Inc. office nearest you.
In Canada—T. Eaton Co., Ltd.

KENTILE, INC., 58 Second Avenue, Brooklyn 15, New York • 350 Fifth Avenue, New York 1, N. Y. • 705 Architects Building, 17th and Sansom Streets, Philadelphia 3, Pennsylvania • 1211 NBC Building, Cleveland 14, Ohio • 225 Moore Street, S.E., Atlanta 2, Georgia • 2020 Walnut Street, Kansas City 8, Missouri • 1440 11th Street, Denver 4, Colorado • 4332 South Kolin Avenue, Chicago 32, Illinois • 1113 Vine Street, Houston 1, Texas • 4501 Santa Fe Avenue, Los Angeles 38, California • 95 Market St., Oakland 4, Calif. • 452 Statler Building, Boston 16, Mass.

All of the well known advantages of colorful Kentile can be brought to Walls as well as Floors. Long life, permanent colors, ease and economy of installation and maintenance are some of the advantages that are making Kentile Walls favorites for residential and commercial installations everywhere.

RESIDENTIAL: The 26 modern colors add beauty and interest to any room... resist dirt and stain... clean simply, quickly and economically. The low initial cost plus the long life and simple upkeep make Kentile Walls the wise choice as well as the modern one.

Kentile can be used on kitchen and bathroom walls... with the exception of enclosed shower areas where installation is not recommended.

COMMERCIAL: Kentile is the perfect wall covering for schools, hospitals, public buildings... stores, offices and corridors. No matter how hard the daily wear, Kentile retains its attractive new look... surface dirt cleans off easily and thoroughly with merely mild soap and water.

Kentile can be applied over any smooth, firm wall surface with the Wall Tile Adhesive made expressly for that purpose.

And when it comes to floors . . . SPECIFY KENTILE BY NAME . . . because of its

- ... **appearance**—a complete range of marbled colors in Kentile and SPECIAL Kentile. Also, feature strips, decorative inserts, edging and cove base.
- ... **installability**—Kentile can be applied over any interior smooth wood, metal or concrete surface... even below finish grade over concrete on fill in direct contact with the earth.
- ... **availability**—Over 3,000 Kentile dealers throughout the country assure prompt attention to your needs.
- ... **service**—Nine conveniently located Kentile, Inc. offices and a nation-wide system of trained representatives plus a comprehensive selection of technical literature, are available to help solve any flooring problem.
- ... **low cost**—Installed prices are lower than those of practically any flooring material; varying with size and condition of floor; colors and thicknesses chosen and freight rates. Accurate estimates are available from any Kentile dealer—listed under FLOORS in your classified phone directory.

KENTILE®

The Asphalt Tile of
Enduring Beauty



PRODUCTS

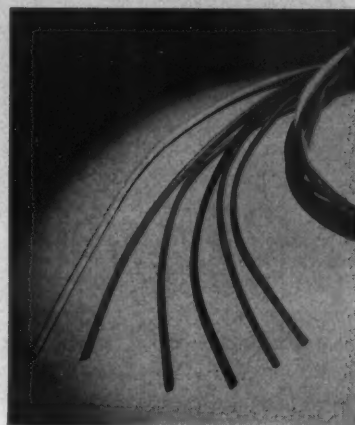
(Continued from page 222)

Plastic Wiring and Markers

Two products made of *Vinylite* plastic have recently been announced:

- Electrical insulating tubing and sleeving made of *Vinylite* resin plastisol and braided glass fibers, is said to provide sturdier insulation at the same price as

cotton or rayon-base insulations. According to the manufacturer, the wire can be twisted and knotted without losing any of its electrical insulating properties. It can be cut cleanly, leaving no frayed ends, and does not support combustion. It is also reported to be resistant to abrasion, moisture, oil, grease and most chemicals. It is claimed to have endured high temperatures with practically no physical change or loss of dielectric strength. Tubing is available in grades A-1 and B-1; the C-1 and C-2 sleeving in sizes from No. 24 to 3/8 in.



Plastic tubing for electrical insulation cuts cleanly, can be knotted or twisted

Colors are black, yellow, green, blue, grey and brown. Bently, Harris Manufacturing Company, Conshohocken, Pa.

- Permanent wire and cable markers made of *Vinylite* plastic rigid sheet in either flat or sleeve type, with an overlay of clear *Vinylite* to protect the lettering. The new markers are said to be fungus- and vermin-proof and resistant to abrasion, water, oil, gasoline, alcohol and most acids. The sleeve-type markers, in sizes as small as 1/8 in. or as large as 3 in. diam, slip tightly over wire or cable of any shape in cross section. Any kind of identification as well as color banding can be printed on the marker.



Plastic markers in flat and sleeve types protect lettering with clear overlay

The flat-type markers are made in any size, shape or thickness, punched with any number of holes of any shape. Special tools for slipping sleeve-type markers on wire or cable are available.

(Continued on page 226)



FOR LOWER MAINTENANCE SPECIFY *Pella* VENETIAN BLINDS

Neat, efficient Pella Venetian Blinds are the logical choice in blinds for commercial and institutional use because Pella's many quality features minimize maintenance problems. Highest standards in the selection of materials, ingenious designing and expert workmanship combine to make Pella Venetian Blinds the preferred choice of architects today.



Write for new **FREE BOOK** on "Pella Venetian Blinds" for commercial and institutional applications.

ROLSCREEN COMPANY
Department C-58, Pella, Iowa

Without obligation, please send **FREE** new booklet "Pella Venetian Blinds."

NAME _____

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Pella's QUALITY FEATURES SOLVE BLIND MAINTENANCE PROBLEMS . . .

- Fully Enclosed Headmember
- Slip Proof Tilting
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- Long-Lasting Nylon Cords
- All Types of Slats
- Custom Made

10 YEAR GUARANTEE

All of Pella's Metal Headmembers are guaranteed for ten years. In case of defect, a new Headmember will be furnished.

what's the big idea?



Architects everywhere tell us that the kitchen is *the big idea* in the minds of their residential clients. Women, today, want kitchens that are *efficient*, *colorful*, and above all, *livable*—for here's where most of each day will be spent. As one prominent architect and editor recently put it, "In planning today's house, more client-interest is devoted to the kitchen than to the living room!"

Increased kitchen-interest no doubt accounts for part of the interest architects are showing in CONSOWELD Decorative Laminates. For CONSOWELD so completely embodies the qualities women want in their kitchens. *Color?* More than 40 handsome colors and patterns available, including lifelike new woodgrain patterns. *Efficiency?* No other surfacing material keeps sparkling clean and new-looking as easily as CONSOWELD—just wipe it with a damp cloth, no other cleaning is needed. *Livability?*

CONSOWELD is wonderfully easy to live with—has an amazing resistance to any kind of wear—keeps its good looks year after year.

Residential applications—kitchens, baths, game rooms, etc.—are just one field in which CONSOWELD Decorative Laminates are growing in popularity. In factories, stores and offices . . . in schools, hospitals and civic buildings . . . wherever designs must *meet the public*, the long-wearing attractiveness of CONSOWELD is indicated. For design flexibility, ease of installation and years of "no-maintenance" service specify CONSOWELD—*good for a colorful lifetime!*

Commercial • Industrial • Institutional • Residential

All 4 call for **CONSOWELD**

CONSOWELD, Box 50, Wisconsin Rapids, Wisconsin
Please send me—

- ☐ CONSOWELD Color-Ring samples
- ☐ CONSOWELD Room Planning Guide
- ☐ CONSOWELD installation data

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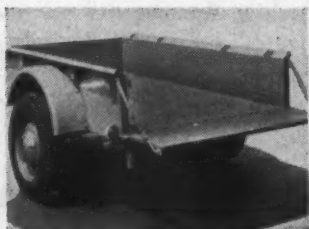
Consolidated Water Power & Paper Company—manufacturers of CONSOWELD Laminates and Consolidated Enamel Papers, Wisconsin Rapids, Wisconsin

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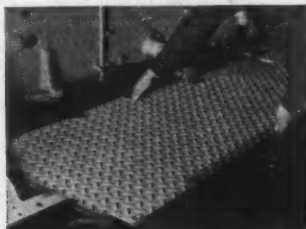


For greater safety under foot,
in your plant and on your products

Inland 4-Way Safety Plate®



Adds Strength



Easy to Fabricate



Safe Footing



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38 So. Dearborn St., Chicago 3, Ill.
Sales Offices: Chicago, Davenport, Detroit,
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New Bulletin with New
Ideas—Just Out! Bulletin
Fl. Complete engineering
and application data.
Send for it!

STOCKED BY LEADING STEEL WAREHOUSES

Architectural Engineering

PRODUCTS

(Continued from page 224)

as is also a threading device for looping
cord through holes in flat-type markers.
Actioncraft Products, 8 Sagamore Hill
Drive, Port Washington, N. Y.

New Sprinkler Head

A new type of fire extinguisher head,
the Rockwood T-Head, has been recently
developed by the Rockwood Sprinkler
Company of Worcester, Mass. Engi-
neered and designed for use in fixed
piping systems, it has a directional wide
angle, medium velocity discharge and is



Fire extinguishing head has new wide
angle discharge for greater coverage

installed in a pendant position. Recom-
mended for both automatic and open
deluge use, it can be used either as a
sealed or open head. The design of the
head is said to break up water into a
fog pattern fine enough to completely
fill the area from ceiling to floor and
heavy enough to quickly reach any fire
on the floor. No water is discharged
directly onto the ceiling and as the cov-
erage of each head overlaps the others,
a complete barrier is set up between fire
and ceiling. Because of this, it is claimed
that fewer heads are necessary to con-
trol and extinguish fires. Rockwood
Sprinkler Company, 38 Harlow Street,
Worcester 5, Mass.

(Continued on page 228)

We have been asked:

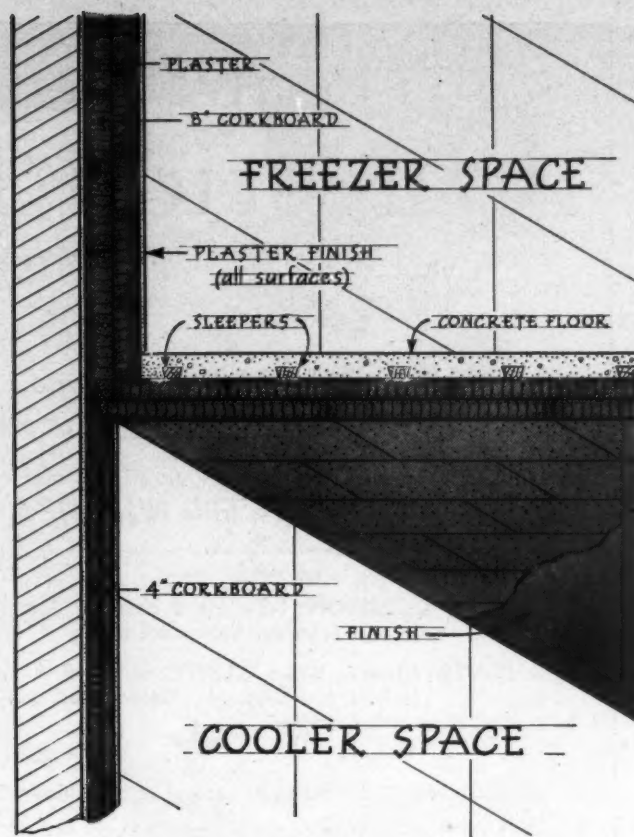
"Why should freezer storage space be located over cooler space?"

"We plan to build a new warehouse containing both freezers and coolers," writes a wholesale food distributor. "We understand that freezer space should be built above rather than below cooler space. Is this correct? Please illustrate a good method for installing insulation in these rooms. The building will be of curtain wall construction."

To answer this question, we made the recommendation illustrated at right. Notice that the freezer is located *above* the cooler. This is sound practice whenever these areas are built one above the other. There are good reasons for this placement. If the cooler were built above the freezer, its floor might become so cold for a foot or more above the concrete floor that food placed on it for above-freezing storage would freeze and spoil. Another factor is economy. When freezers are on upper floors in multiple storage buildings, the tendency of cold air to settle makes it less expensive to refrigerate the higher temperature coolers below.

The insulation on the freezer walls is two layers of Armstrong's Corkboard, each 4" thick. Cooler insulation consists of two layers of corkboard, each 2" thick. All corkboard is applied in hot asphalt after the wall has been leveled with back plaster and primed with asphaltic paint.

The ceiling of the cooler is insulated with two layers of 3" Armstrong's Corkboard, with



the first layer applied in hot asphalt and nailed to treated beveled wood strips placed on 18" centers in the forms when the floor was poured. The second layer then is applied in hot asphalt and additionally secured to it with oak skewers.

Helping you find the right answers to your various insulating problems is just one of the services of Armstrong's Contracting Organization. We can also supply you with top-quality insulating materials and the skilled workmen to apply them properly. Whenever you have an insulation job, it pays to contact Armstrong. The *complete* insulation service offered by Armstrong will save you time, money, and material.



SEND US YOUR QUESTIONS. If you have any questions on the use of insulation or the construction of low-temperature installations, we'll do our best to help you with a practical answer to your particular problem. Just outline your problem on a post card or letter and address it to Armstrong Cork Company, 2411 Concord Street, Lancaster, Pennsylvania.

ARMSTRONG'S INDUSTRIAL INSULATIONS

MATERIALS - INSTALLATION

FOR ALL TEMPERATURES FROM 300°F. BELOW ZERO TO 2800°F.

The Architect's Question Box



Published now and then in
the interests of wood finishing,
by FIRZITE and SATINLAC, those
two little **WIZARDS WITH WOOD**.

QUESTION: How can I obtain a durable yet inexpensive two coat finish for wall panelling?

ANSWER: Clear or White FIRZITE, wiped off, followed by paste wax makes an excellent two coat job. Colors-in-oil can be added to the FIRZITE for other shades.



QUESTION: Should wood be sanded before finishing?

ANSWER: Definitely. Sanding removes finger and dirt marks as well as any roughness caused by moisture. Poorly sanded or unsanded sections are likely to cause a spotty or irregular finish.



QUESTION: Why is it recommended that the painter make up samples before he starts the job?

ANSWER: Samples should be made up on odds-and-ends pieces of the wood used, as different growths of the same wood vary in tone. Also, the architect then knows he will get the effect required. With FIRZITE and SATINLAC the painter has an easy way to a beautiful and durable finish.



QUESTION: How do I obtain a durable penetrating finish on new floors?

ANSWER: Two coats of Clear FIRZITE make an excellent finish on floors. Each coat is generously applied to the wood and the excess wiped off in about 5 minutes. Eight hours drying time is allowed between coats and the last coat is lightly buffed with 00 steel wool, then waxed. A finish of this type extends below the surface of the wood, and consequently scratches and scuff marks do not show as readily as when surface finishes such as varnish or shellac are used.

If you have any problems in wood finishing, let us help you. Write also for specification sheet.

May we send you a blond Birch panel showing SATINLAC finish?

UNITED STATES PLYWOOD CORPORATION

Dept. 351, 55 West 44th Street, New York, N. Y.



Architectural Engineering

PRODUCTS

(Continued from page 226)

Three-Unit Conveyor System

Designed to help overcome difficult installation problems, a new conveyor for handling and transporting objects by gravity or hand propulsion employs only three basic units — straight sections, 90 deg curved sections and adjustable trestles. In the conveyor, balanced rollers



Conveyor adjusts to difficult locations

rotate on full length cold rolled steel shafts fitted with ball bearings. Cross channels are said to prevent the frame from spreading under heavy loads; shafts are reported to retain alignment. Rollers are spaced on 4 in. centers for full bearing surface and are raised $\frac{3}{8}$ in. above the frame to accommodate packages wider than the conveyor. Lyon Metal Products, Inc., Aurora, Ill.

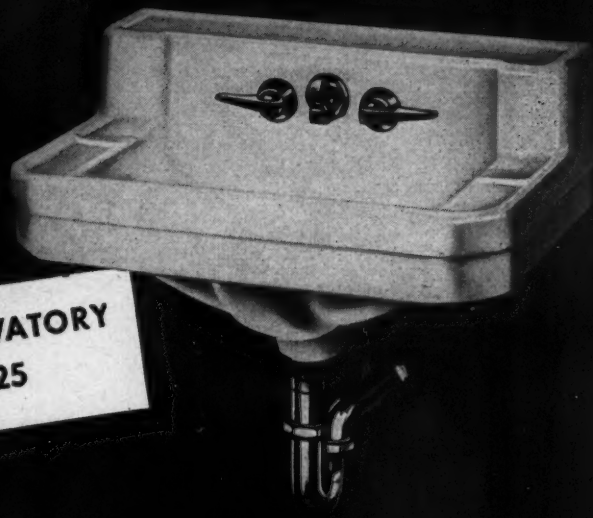
Color-Corrected Mirror Light

A cold cathode fluorescent lamp employing a formula of neon, argon and vaporized mercury is utilized in *Mira-Light*, a fixture designed for installation over mirrors in stores and homes, and which is described as giving a color-corrected, uniformly distributed shadowless light. It is especially recommended by the manufacturer for shop interiors where a natural light is desirable, and it can also be used with bathroom mirrors or vanity tables. It can be installed in existing structures or in new buildings, and installation is described as very simple, the entire fixture being mounted

(Continued on page 230)



DENTAL LAVATORY
Plate No. G-625



"SPACE-SAVER" LAVATORY
Plate No. G-125

2 new lavatories by RICHMOND

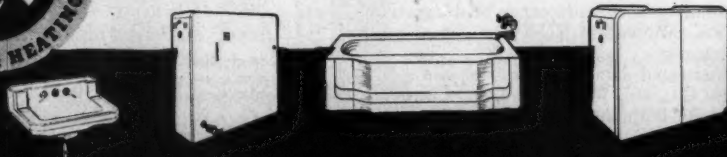
Here are two new, modern lavatories by Richmond... typical of Richmond's quality standards in construction, styling and economy. Here are two more reasons why more Richmond enameled cast iron and vitreous china fixtures are used nation-wide!

Here are two lavatories designed for specific use... for dental service in homes, dental offices, schools, hospitals and other institutions use the G-625 dental lavatory... for any location where space is tight use the G-125 space saver.

Keep these quality features in mind:

The Richmond G-625—vitreous china dental lavatory—for service in homes, dental offices, schools, hospitals and other institutions... 14" x 14" ... with flushing rim, shelf back, rear outlet, combination supply and drain fittings with vacuum breaker... in "whiter-white," or choice of five rich, lustrous colors.

The Richmond G-125—Midal... vitreous china "space-saver" lavatory for any location where space is at a premium. Just 14" deep by 20" wide with shelf back, two soap dishes, rear outlet, front overflow, combination supply and drain fitting... in "whiter-white" or choice of the five popular Richmond colors.



See your wholesaler or Mail Coupon Today:

Richmond Radiator Company
19 East 47th Street
New York 17, New York

AR/11

Please send me information and literature on the new Richmond dental lavatory and the Richmond space-saver lavatory.

NAME.....

COMPANY.....

ADDRESS.....

CITY.....ZONE.....STATE.....

PRODUCTS

(Continued from page 228)

in place with four screws. The lamp is reported to have a useful life expectancy of at least 15,000 hr. A toggle switch and outlet for connecting appliances are embodied in the fixture, which will fit all mirrors up to 18 in. wide by 24 in. high, and which can be used also as a shelf. Mobeco, Inc., Watertown 72, Mass.

Gas-Oil Burner

Controlled by an outside thermostat set at the temperature point at which the local utility company expects service difficulties, the *TWINfuel* burner switches automatically from gas to oil and back. It is also said to be capable of changing automatically depending upon drops or rises in pressure of the gas line. Designed for industrial and commercial installation, the burner is described as of special value to plants, large multiple dwellings and institutions faced with the possibility of gas short-



Gas-oil burner switches automatically from one fuel to the other as needed

*Our Lady of Fatima Church, Scarsdale, N. Y. • Architect: Robert A. Greene, Tarrytown, N. Y.
Contractors: Caldwell & Stott, Inc., New York City*



All at one low cost

... AN INSULATIVE STRUCTURAL WALL

... A DECORATIVE INTERIOR FINISH

... COMPLETE ACOUSTICAL TREATMENT



Close-up showing sizes, texture and joint treatment.

Churches, schools and similar structures built with Waylite masonry have stability and great architectural beauty. In addition, they offer a three-fold advantage.

These masonry walls have high thermal insulative properties in addition to adequate structural strength. The exposed surface of the units eliminates need for additional acoustical treatment.

And finally a very wide range of decorative effects is achieved with varying size of units ... textures ... joint treatments ... and colors. For illustrated data book, address the Waylite Co., 105 W. Madison St., Chicago, or Box 30, Bethlehem, Pa.

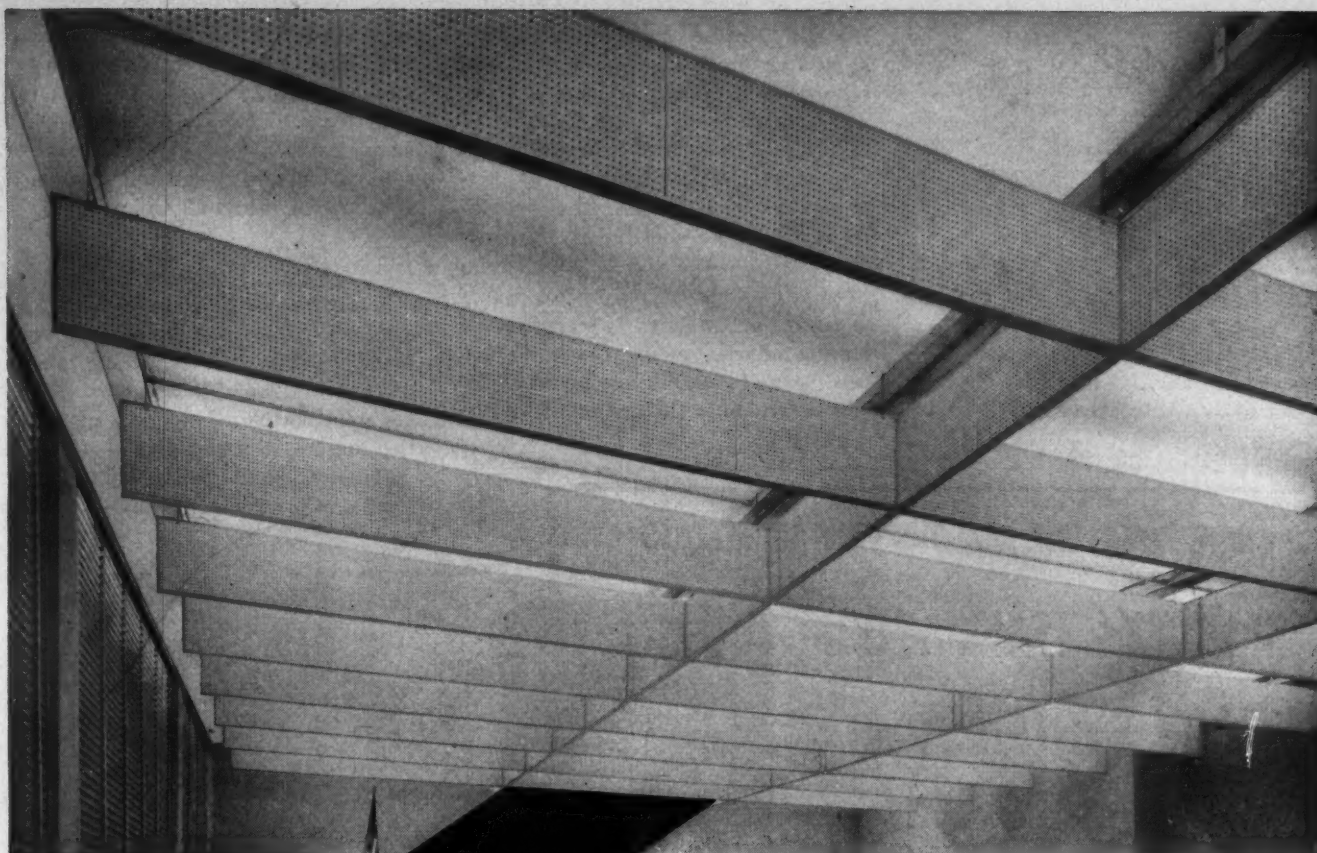
WAYLITE
MASONRY UNITS

ages and freezes. The manufacturer states that by permitting normal continuance of heating processes, regardless of weather conditions, the burner will enable industries to maintain production schedules without the expense of shutdowns. The burner is available in seven sizes, from 80,000 to 3,000,000 Btu capacity. Smaller sizes are of stainless steel construction, temperature refractory and heavy cast iron being used on larger models. All employ inshot-type gas-oil burners, except the Model POC, rated from 80,000 to 280,000 Btu, which utilizes an upshot burner. Norman Products Company, 1150 Chesapeake Ave., Columbus, Ohio.

Gas Air Conditioner

A new *Mueller Climatrol* gas-fired "lowboy" winter air conditioner is announced by the L. J. Mueller Furnace Company of Milwaukee. Known as the Type 112, the unit will be available in 90,000 and 110,000 Btu inputs. It is designed for low-cost basement installation in new and modernized homes, and is A.G.A. approved for natural, mixed, manufactured and propane gases, and for high altitude operation without derating. It is also available with dual-gas controls for automatic alternate operation of natural and LP gas. Among the features of the new unit cited by the manufacturer are compact size and ease of installation. Assembled on a solid steel base, it is reported to be easy to level and to require no grouting for installation. It employs a heavy, welded steel cylindrical heat exchanger with wrap around radiator. Both are reported easily accessible for cleaning. Available with self-generating, electric solenoid, motorized or diaphragm gas valves. L. J. Mueller Furnace Company, 20005 W. Oklahoma Ave., Milwaukee 15, Wis.

(Continued on page 232)



LIGHT

SOUND

controlled with one efficient system

CURTIS



SYSTEM

The new Curtis Light and Sound Conditioning System offers an entirely new approach to LIGHTING and SOUND CONDITIONING problems. The system provides quality low-brightness illumination with acoustical treatment which eliminates excessive sound reflections and the annoyances and distractions which sound creates.

The Electrical System — Standard basic sections of the Underwriters' approved electrical portion of the Curtis System are supplied completely wired and packaged in 8" x 12" x 96" cartons. Each basic section covers a ceiling area of 256 square feet. Combining the basic sections with extension and wing sections makes it possible to provide quality low-brightness illumination and effective sound treatment.

The Sound System—The vertical baffles are constructed of highest quality acoustical material with a flame retarding, high reflectance washable finish. The baffles are positioned between the 8 foot, T-12, single pin fluorescent lamps to provide both recommended shielding and sound conditioning.

Yes, the Curtis Light and Sound Conditioning System offers the finest in lighting and sound conditioning efficiency from the stand point of low initial cost, low installation cost, low operating cost and low maintenance cost.

A comprehensive bulletin, completely illustrated, will be available soon. Write Dept. K3-05 for your free copy.

CURTIS LIGHTING, INC.

Dept. K3-05, 6135 W. 65th Street, Chicago 38, Illinois

Name

Company

Address

City State

PRODUCTS

(Continued from page 230)

Transparent Masonry Moisture Seal

An invisible, water-repellent coating of masonry pores which penetrates the surface up to $\frac{3}{8}$ in. with some materials is said to be afforded by *Silaseal*, a colorless silicone-base masonry seal. It is

reported that the product remains after application until abrasion and natural erosion wear off the masonry surface. The transparency of the seal is cited as being of particular value for treatment of stone and brick where the natural beauty of the structure would suffer if color were added. The transparency of the product is also said to make it possible to treat only walls where moisture penetration is experienced, leaving adjacent walls which do not need it untreated. For new and recently cleaned buildings the product is said to

have the further advantage of preventing dirt and soot from clinging to the surface, allowing it to be washed away with each rainfall. It may be applied summer and winter by either brush or spray. Surface Protection Company, 16802-A, Cleveland 12, Ohio.

Furniture Group

A new furniture group called the *Predictor Group* has been designed by Paul McCobb. It includes 19 furniture items and eight floor and table lamps. Woods are solid northern hard rock maple in two finishes, a waxed light tone called *Nutmeg* and a black-brown tone called *Chicory*. Construction is all-wood, em-

NINE EXCELLENT REASONS WHY ARCHITECTS

SPECIFY "STANDARD" CLOCK SYSTEMS FOR SCHOOLS

1. Only one (heavy duty industrial type) motor used in the entire system.
2. Program mechanism continues during power failures; signals sound on correct time immediately on resumption of power.
3. Time dial and program are geared together — always synchronized.
4. No batteries of any kind — reserve power always available.
5. Simplest setting of program schedules; punch printed ribbon and place it on drum.
6. Special schedules may be set up on spare ribbons and interchanged in a moment. Extra ribbons furnished without charge.
7. Bell board allows placing any signal on any program schedule by changing position of plug on board; also permits manual ringing of any signal when required.
8. Automatic reset feature for secondary clocks allows individual setting — not only groups — keeping all clocks together.
9. Entire system is simple in design; fewer parts to require attention.



Master-Program Controller, Type SYN-S. Approx. Dimensions, 15" x 38" x 9".

See our complete open specifications in Sweet's Architectural File.

S-1

Other "Standard" Products for Schools: Fire Alarm Systems • Laboratory Panels (for Physics, Chemistry, Electrical Shops and Laboratories, Pharmacology, Psychology, etc.)

FOUNDED **STANDARD** 1884

THE STANDARD ELECTRIC TIME CO.

81 LOGAN STREET • SPRINGFIELD, MASSACHUSETTS



Adjustable breakfront forms part of new furniture group

playing frames, stretchers, spindles, slats and legs in slender turned rounds, often tapered. Foam rubber is used on all upholstered pieces. Upholstery fabrics include Peruvian linens in a variety of shades, California woolens, homespun Cheyney textures and McCobb's own handprint, *Thatch*. The base grade muslin cover is in Konwiser *Congo Cloth*. Pieces include chairs, occasional tables, dining tables, a desk, a breakfront, and upholstered chairs, an ottoman, loveseat, sofa and sectional. Furniture is manufactured by O'Hearn Manufacturing Company, Gardner, Mass., lamps by Northcraft Lighting Company, Nyack, N. Y. Distributed by B. S. Mesberg, National Sales, 201 E. 57th St., N. Y., and Merchandise Mart, Chicago.

CORRECTION

The RECORD regrets that a new wall panel developed by E. F. Hauserman Co., was incorrectly called "Koroweld" on page 206 of the September 1951 issue. The correct name of the product is *Korweld*.

SCHLAGE ... first name in cylindrical locks

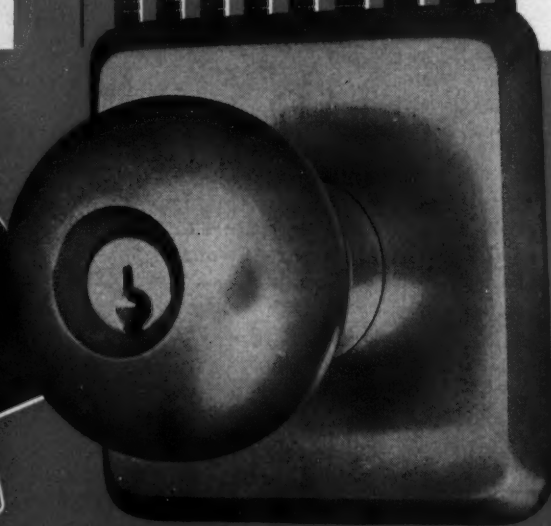


University of Miami
MERRICK BUILDING

Architect: Robert M. Little,
Miami, Florida

Contractor: Gust. K. Newburg
Construction Company,
Miami, Florida

SCHLAGE



Schlage Monarch Design

used in this ultra-modern building

SCHLAGE LOCK COMPANY - BAYSHORE BLVD., SAN FRANCISCO - EMPIRE STATE BLDG., NEW YORK

LITERATURE

(Continued from page 190)

Aluminum Lampholders

Steberlights. A Bulletin illustrating the manufacturer's cast aluminum lamp-holders for Par-38 and R-40 lamps. Also shown are cluster fittings, mounting flanges and accessories. Specifications are included. 4 pp., illus. Steber Mfg. Co., Broadview, Ill.

Porcelain Enamel and its Uses

Porcelain Enamel. First edition of a new periodical devoted to architecture and building, and published by the Porcelain Enamel Institute. The publication illustrates both new developments and typical applications of porcelain enamel in construction of new buildings and remodeling of existing structures. To be issued quarterly. 8 pp., illus. Porcelain Enamel Institute, Inc., 1010 Vermont Ave., N. W., Washington 5, D. C.

Hardwood Kitchen Units

Porta-Bilt Custom Hardwood Kitchens. Published for insertion in the A.G.A. "Reference Manual of Modern Gas Service," this data sheet illustrates a variety of wall, base and utility cabinets, sink fronts and special-purpose units. Specifications of most units are included. 4 pp., illus. Mutschler Bros. Co., Napanee, Ind.

Tile Floors

Floors of Ceramic Mosaic Tile. Booklet presents colors, patterns, sizes and shapes available in a line of ceramic tiles. A variety of floor layout patterns are shown in full color, as is a section devoted to photographs of actual installations of the tiles. 16 pp., illus. The Mosaic Tile Co., Zanesville, Ohio.*

Air Distribution

Air Distribution for TV Studios (Pamphlet F-4712). Shows actual installations, and describes a variety of air distribution equipment suggested for solving the problem of introducing large volumes of air at low noise levels in television studios. 4 pp., illus. Barber-Colman Co., Rockford, Ill.*

Plastics

Extruded Plastics. Brochure describes applications of custom made thermoplastic extrusions. Data is also included on the facilities and range of extrusions available, applications of extrusions to particular products, and properties of thermoplastics. 8 pp., illus. Anchor Plastics Co., Inc., 533-5 Canal St., New York 13, N. Y.

Acoustical Materials

Sound Absorption Coefficients of Architectural Acoustical Materials (Bulletin XIII-1951). Presents a series of tables giving results of tests on various acoustical materials manufactured by members of the Acoustical Materials Association. The test data was obtained under identical conditions to afford a basis of comparison of the different products. Each material is described as to type, thickness, mounting, size, weight and surface, and is rated for sound absorption and noise reduction coefficients, and for light reflection values. A short list of coefficients of general building materials and absorption coefficients of auditorium seats and audiences is also included. 17 pp., illus. Acoustical Materials Assoc., 59 E. 55th St., New York 22, N. Y.

(Continued on page 236)



The Bureau rating plate is available to all manufacturers who meet its quality standards and requirements.

This truck mixer rating plate is what enables architects, engineers and contractors to confidently buy more than \$300,000,000 worth of ready-mixed concrete a year.

It guarantees at a glance the proper drum design and speed, accuracy of water control and full amount of free mixing space needed to properly mix or agitate a rated batch.

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Truck Mixer Manufacturers Bureau

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Pittsburgh, Pa.

CHAIN BELT COMPANY
Milwaukee, Wis.

CONCRETE TRANSPORT MIXER CO.
St. Louis, Mo.

THE JAEGER MACHINE COMPANY
Columbus, Ohio

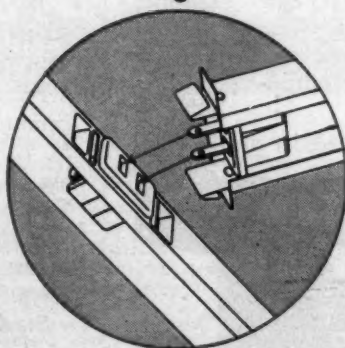
THE T. L. SMITH COMPANY
Milwaukee, Wis.

WORTHINGTON PUMP & MACHINERY CORP.
Dunellen, N. J.

announcing new "BENJAMIN *Grid-Lite*" SYSTEM



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SCHOOLROOMS
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OFFICES, ETC.



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"plug-in" one
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are needed!

Not just another lighting fixture but a completely new conception that literally converts the entire ceiling into a single light source...a new system that is ultramodern in results, yet is priced within the means of all.

Benjamin "Grid-Lite" Systems bring you these outstanding advancements...

- 1 cost less to buy...less to install
- 2 high system efficiency...diffused light
- 3 cuts maintenance time and labor

SEND FOR "GRID-LITE" DATA BULLETIN giving complete details and specifications for this newest Benjamin lighting system. Benjamin Electric Mfg. Co., Dept. Q-1, Des Plaines, Ill.



R 56763R

LITERATURE

(Continued from page 234)

Drafting Room Lighting

Lighting Guide to Better Drafting (LS-137). Bulletin discusses and illustrates recommended types of lighting systems for drafting rooms, for use with straight-edges and shiny surfaces, and on the proper positioning of drafting boards with regard to lighting. Features are described for each of the types of light-

ing presented. 8 pp., illus. Inquiry Bureau, General Electric Co., Nela Park, Cleveland 12, Ohio.*

Metal Cleaners

Deoxidine Selection Chart. Lists, in tabular form, several phosphoric acid metal cleaners and rust removers according to strength, temperature limits, rust and oil removal, etc. The chart also gives information on the sequence of operation and equipment required in each process. American Chemical Paint Co., Ambler, Pa.

Technical Renderings

Graphic Techniques To Simplify The Complex. Folder and a 10 pp. insert — *Technograph for War Production* — tell of the firm's facilities for making technical bulletins, charts, graphic displays, reports, isometric and cutaway renderings, etc. Examples of their work are illustrated. 4 pp., illus. Technograph Co., Division of Walther-Boland Assocs., 785 Market St., San Francisco 3, Calif.

Hand and Hair Dryers

Electric-Aire Modern Drying Equipment. Catalog contains informative and technical data on a line of electric hand dryers and institutional hair dryers, including specifications, installation procedures, and suggested uses. 8 pp., illus. Electric-Aire Engineering Corp., 209 W. Jackson Blvd., Chicago 6, Ill.*

Roof Cooling

Walco Roof Cooling Systems (Bulletin No. 20). Folder describes a water spray roof cooling system. Notes are included on features of the system, operation, installation, and specifications. Some of the equipment parts are illustrated. 4 pp., illus. Water Cooling Corp., 71 Nassau St., New York 38, N. Y.

Glass Store Fronts

How To Give Your Store The Look That Sells. Booklet illustrates a great variety of stores remodeled with open-vision glass fronts. Before and after photos are included of each building. Other portions of the booklet are devoted to modernization of store groups, store interiors, and to Pittsburgh products. 32 pp., illus. Pittsburgh Plate Glass Co., Glass Advertising Dept., 632 Duquesne Way, Pittsburgh 22, Pa.*

LITERATURE REQUESTED

The following individuals and firms request manufacturers' literature:

Josh C. Bennett, Jr., Architect, W. Dudley Hunt, Jr., Associate, 122 East 10th Street, Anniston, Alabama.

Frank A. Buckland, Architects' Superintendent of Construction, Care of M. L. Scott, 1031 Sibley Tower Building, 25 North Street, Rochester 4, New York.

Nashaat Morsy, Architect Consultant to the Courts, P. O. Box 1185, Cairo, Egypt.

Stanley Nerdum, Architect, Division of Architecture, State of Wisconsin, State Capitol, Madison 2, Wisconsin.



ROMANY TILES
ARE REAL TILES

**HARD GLAZED
REAL CLAY TILE**

For Hospitals, Schools and Public Buildings, many architects have preferred ROMANY RED BODY TILE for its extra durability. It is more highly resistant to moisture and temperature changes and designed to withstand wear impact not ordinarily associated with tile surfaces. Many attractive colors.

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**UNITED STATES
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Member: Tile Council of America
217-H FOURTH ST. N. E.
CANTON 2, OHIO

Designed to fit *YOUR* plans

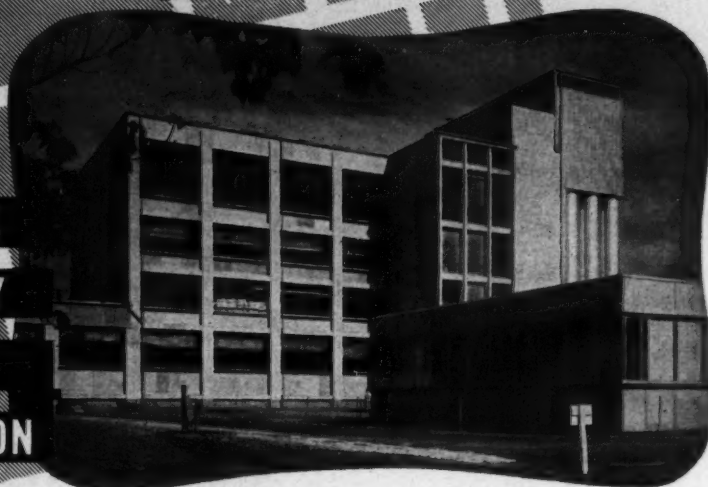
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LOWER MAINTENANCE COSTS

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FOR SIDEWALLS, SKYLIGHTS, AND SAWTOOTH CONSTRUCTION

YOU BUILD IN THESE BENEFITS

- ✓ **STRENGTH**—Many times greater than flat glass of equal thickness.
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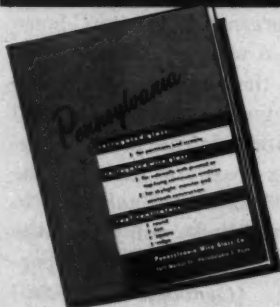
You plan with foresight when you specify Pennsylvania Original Solid Corrugated WIRE GLASS for sidewall and roof design. The flexibility of these complete units of heavy-duty solid corrugated glass (with wire netting encased) offers unlimited engineering possibilities for new construction and modernization of industrial plants, institutions and commercial buildings. Original Corrugated WIRE GLASS has the solid strength to "take it"—under the most punishing production and vibrating traffic conditions. Maintenance is negligible. Nothing to rust or corrode. Diffused daylight keeps workmen happy—increases operating efficiency. Easily installed on steel, wood, or concrete because no supplementary frames are necessary. Original Solid Corrugated WIRE GLASS* has been the choice of architects, plant owners, and engineers for many years. Our **FREE** field engineering service is ready to help you with your plans.



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THE RECORD REPORTS

WASHINGTON (Cont. from p. 32)

The authorizing measure called for construction in 44 of the 48 states including all manner of military installation. A great deal of troop housing and officer unit home construction was covered.

Under prior arrangements permitted in special dispensation from Congress the services had gone ahead with arranging for architectural and engineering contracts on some of the work even be-

fore funds for payment were voted. This permitted an earlier start on large-scale projects requiring months just for the planning effort.

Fannie Mae Money Available

Raymond M. Foley, administrator of HHFA, made an additional \$200 million of uncommitted funds available on Oc-

tober 2 for the purchases of mortgages covering housing programmed by his agency for critical defense housing areas and for military housing financed under the Wherry Act. This additional set-aside was for mortgage purchases on housing programmed on or after September 1, 1951, but before November 1, 1951. As to Title VIII, the Wherry Act, the application was to housing on which Federal Housing Administration commitments to insure had been issued on or after September 1, 1951, but prior to November 1, 1951.

At the same time, Mr. Foley said that mortgages for which these funds are available would not be subject to the two-month waiting period. The \$200 million fund came in addition to an earlier set-aside of \$350 million for mortgage purchases covering housing programmed in critical defense housing areas before September 1, 1951, and Wherry Act construction on which commitments were issued on or after March 1, 1951, but prior to September 1, 1951.

The administrator estimated that mortgages covering defense housing programmed prior to the September 1 date aggregated \$215 million. Mortgages covering Title VIII military housing for which commitments to insure were issued on or after March 1 totalled \$126 million, according to HHFA estimates. This came to but \$341 million for the two types, leading HHFA to announce that the \$350 million set aside earlier was more than enough to cover such mortgage purchases.

In a subsequent move, Mr. Foley apportioned \$200 million in new authorization carried in the defense housing and community facilities and services law. It was decided to apply \$25 million of the amount for disaster housing on an initial basis, \$50 million for military housing constructed under Wherry Act terms, and the other \$125 million for programmed defense housing in designated critical defense housing areas.

The defense housing was divided into separate groups: (1) what is needed at Atomic Energy Commission installations and (2) all other programmed defense housing.

Due to the urgency for the AEC housing, \$20 million was set aside for prior commitments that may be issued for such construction. Since programmed housing for critical defense areas will require financing greatly in excess of the remaining \$105 million of authority to commit, that remainder will permit the issuance of prior commitments to pur-

(Continued on page 240)

SAFeway chooses the BEST WAY
to Comfort-Condition its Newest Supermarket...

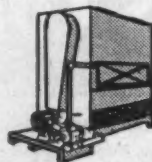


Latest addition to the Safeway Store chain—one of Washington, D. C.'s most modern (and comfortable) shopping centers.

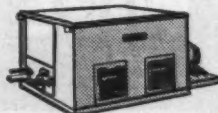
Marlo Cooling Equipment

This ultra-modern Safeway Store in Washington, D. C., has selected Marlo equipment to meet its cooling needs ... and to assure complete customer comfort.

With good reason, too! ... Since Marlo cooling equipment has already proved its superior quality in efficiency, economy and consistent performance in 24 other Safeway Store installations.



EVAPORATIVE CONDENSER—25 ton capacity ... designed to assure maximum water savings ... quiet, durable, compact for long-life service.



AIR CONDITIONING UNITS—one of two such units for supplying the Safeway's entire shopping area with complete summer-winter functions: cooling, heating, ventilating, filtering.



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COOLING TOWERS • EVAPORATIVE CONDENSERS • INDUSTRIAL COOLERS
AIR CONDITIONING UNITS • MULTI-ZONE UNITS • BLAST HEATING & COOLING COILS

FIAT "CASCADE" ENCLOSURE

Two PLEXIGLAS panels are the sliding doors of this new bath enclosure. The corrugated panels, measuring approximately 34" x 60", slide easily in a metal track cemented to the tub rim and in a top channel fastened to sidewalls. Called the "Cascade", the enclosures are manufactured as packaged units, with a choice of crystal clear, gold, or pink PLEXIGLAS, by the Fiat Metal Manufacturing Company, Long Island City 1, New York. They are available nationally through plumbing wholesalers.



Another New Idea for Architects... PLEXIGLAS Bath Enclosures

Looking for an easy way to add the final touch of smartness to a new bathroom, or to modernize an old one? Here it is—a rigid, sliding-panel bath enclosure of gleaming PLEXIGLAS acrylic plastic, crystal clear or in beautiful transparent pastel colors.

Light, attractive, easily installed, PLEXIGLAS enclosures fit virtually any recessed tub. Wet, hard-to-manage curtains are eliminated; the transparent PLEXIGLAS panels give permanent shower protection. The cost of a "Cascade" enclosure, including installation, is considerably less than that of glass panel enclosures. And the resistance of

PLEXIGLAS to breakage, water, heat, and discoloration means long life with no loss of beauty.

Bath enclosures are only one of the many architectural applications of PLEXIGLAS. In homes, offices, public buildings, industrial plants, you'll find it useful for breakage-resistant glazing, glare-reducing lighting fixtures, dome skylights, luminous ceilings, decorative screens and partitions. For signs and storefronts, PLEXIGLAS has become a preferred material. If you want to know more about these architectural possibilities, write for our booklet, PLEXIGLAS FOR ARCHITECTURE.

CHEMICALS



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Toronto, Ontario, Canada

THE RECORD REPORTS

WASHINGTON (Cont. from p. 238)

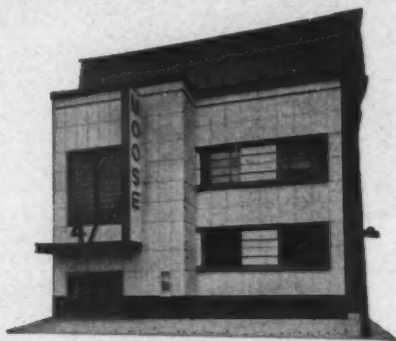
chase only approximately 50 per cent of the amount of mortgage loans for such housing made by an individual lender, the agency explained. Lenders wishing to obtain prior commitments for eligible housing mortgages were advised to apply to appropriate FNMA agency offices.

Shorts

- Organized labor and the Atomic Energy Commission moved closer together in their attitude to increasing work stoppages at vital AEC construction jobs. After an exchange of telegrams between AEC Chairman Gordon Dean and Richard Gray, president of the Building and

Construction Trades Department of the A.F.L., it appeared that a new policy would be worked out between the two organizations. This probably will provide for a moratorium on any strikes at the vital atomic energy plants during the mobilization period. Said Mr. Gray: "We feel that once such a uniform policy is agreed upon, AEC contracts should include proper provisions for elimination of work stoppages. While present disputes appear to be solely between AEC contractors and unions, we believe the underlying cause stems directly from a lack of an equitable, uniform labor policy by the AEC."

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Any Old Building Can Look as Smart and Modern as This!

TO TRANSFORM an old building into a strikingly modern structure follow the nation's leading architects in the swing to SEAPORCEL porcelain enamel.

LOOK AT this building (above), though no mere black and white picture can do it justice! Yet BEFORE Clifford A. Lake, Pittsburgh architect had it rebuilt with a SEAPORCEL exterior, it looked "sick" and "weather-beaten" . . . badly in need of an overall face-lifting.

The bulkheads, coping and window trim, as well as the upright letters now appear in a soft red terra cotta finish . . . with piers, fascia and sign in unobtrusive buff terra cotta.

WHILE LENDING STYLE and dignity to the structure, there is no question of the recaptured realty value of this restored property.

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SEAPORCEL Porcelain Enamel
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Fabricated in any shape,
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Complete Engineering and Erection Departments • Member: Porcelain Enamel Institute

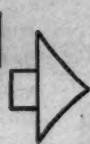
- A month ago the Army Corps of Engineers had completed 90 per cent of the 1951 program to rehabilitate Army posts, camps and stations. Housing and training facilities for more than 675,000 officers and men had been occupied or were ready for occupancy. Upon completion of the \$113 million program early next year, troop facilities for 745,000 men will have been rehabilitated. Most of the work involves repairs to permanent and temporary buildings and placing the electric, water, sewage, heating, refrigeration and fire protection systems in operation. Post engineers are supervising the work on the job.

- The Department of Defense tried locating the Central Military Procurement Information Office in downtown Washington for a short while. It soon was moved back to the Pentagon, however. Spokesmen for the activity, which is under the Office of Small Business, Munitions Board, said visiting business men seeking ways to participate in the defense production program expressed the wish that the office be left at the Pentagon. It was downtown about five months.

- State governors were told at their Gatlinburg, Tenn., meeting by Mobilization Director Charles E. Wilson that they should not expect any more steel, copper or aluminum for state projects before the end of 1952. This applied to other critical materials as well. State officials have protested vigorously that they cannot get the materials needed for essential highway, hospital and school construction. Again, Mr. Wilson said plans were underway to establish a claimant group within the Defense Production Administration to speak for the states. This has been several months in the making, but he indicated the formal

(Continued on page 242)

TECHNIPLAN OFFICE



NEW HIGH EFFICIENCY IN 18%* LESS FLOOR SPACE



*Applies to Techniplan illustrated as compared with traditional arrangement. Other savings up to 30%.

GLOBE-WERNICKE TECHNIPLAN OFFICE

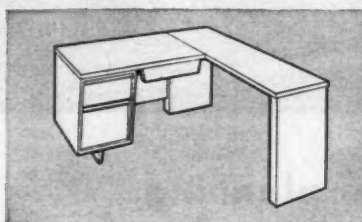
Techniplan, the original fully-developed modular system of office equipment, accomplishes two highly desirable results:

1. Reduces floor space by 18%* per worker without reducing work surface areas.
2. Provides for greater ease and speed in worker output.

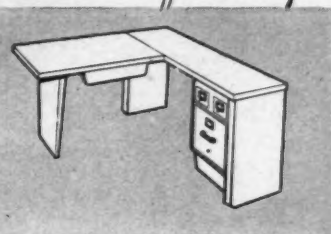
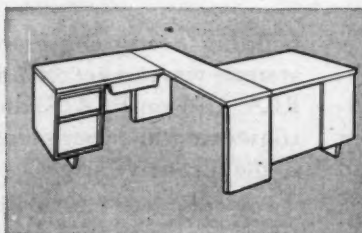
TECHNIPLAN uses interlocking, interchangeable units, offering hundreds of variations in arrangement—space utilization. Any desired combination of work facilities. Wasted out-of-reach areas are avoided.

TECHNIPLAN equipment is simple and tasteful in design for distinguished appearance. It can be installed a few units at a time, or the complete office. Rearrangement of the equipment is always easily and quickly made, to suit changing needs.

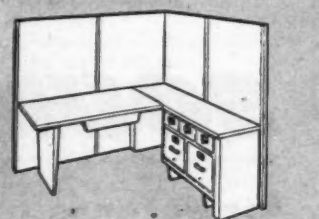
Get Techniplan information from your Globe-Wernicke dealer—listed in your classified phone directory under "Office Equipment-Furniture"—today!



Basic "L" unit—desk with pedestal and center drawer—auxiliary top with end supports.

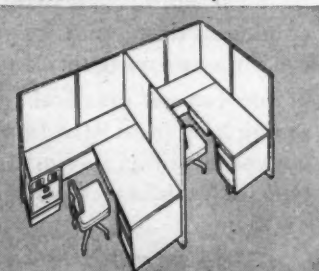


"L" Unit with horizontal section under auxiliary top. Various arrangements possible for letter files, map and drawing files and card index files.



Partitions for privacy—noise barriers—in full (66") or medium (48") height—in all-wood or combination wood and glass.

← Work station for two persons by the addition of desk unit gives economy of space and increased work efficiency.



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Engineering Specialists in
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Cincinnati 12, Ohio

THE RECORD REPORTS

announcement of such a claimant was due soon.

- The National Chamber of Commerce joined the Building Research Institute. BRI was established recently by the National Academy of Sciences as a complementary organization to its Building Research Advisory Board. It will provide a mechanism by which research executives can be brought into closer

WASHINGTON (Cont. from p. 240)

association with the work of BRAB, and it will place industry support for the Board on a firmer foundation by substituting membership dues for voluntary contributions.

- Contractors bidding on specified types of Air Force buildings henceforth are permitted to submit alternate forms of construction and design, the Defense Department announced. The new policy

covered construction bids on airmen's dormitories, indoctrinees' and overseas replacement dormitories, WAF dormitories, and mess and administration buildings. It permits alternate construction details to be bid in competition with designs already prepared. The general standards of quality or size, or use of methods or materials, have not been lowered, it was said. Aim of the new policy is to secure the best construction possible at the lowest cost.

- The Federal Housing Administration sought to sell the 500-unit Pine Chapel Village development, Elizabeth City County, Virginia. It took offers up to September 28, specifying that the sales price be not less than \$3,888,900. This was one of 36 developments in FHA's Property Development Division, involving 3800 units altogether, on which foreclosure actions had been completed. One more large project and two small ones were to be offered soon, FHA said. As of a month ago, there had been foreclosures and re-sales of 83 mortgages covering 40 Section 608 projects. The activity covered 4729 units. And 44 mortgages, involving 1107 units, had been assigned to FHA but not fully foreclosed.

- A new 16-page booklet issued by the Prefabricated Home Manufacturers' Institute tells the story of this industry's contribution to military and civilian housing in the U. S. Entitled "Build Better, Build Sooner with Prefabrication," it is directed to home builders, realtors, mortgage lenders, government officials and everyone interested in the nation's housing activities. Copies are available free from the Institute — 908 20th St., NW, Washington 6, D. C.

- Mobilizer Wilson, speaking in Cincinnati, proposed as a permanent national defense policy the establishment of dual-purpose plants which could be used three ways: for combined civilian and defense production, for total war production, or for total civilian production. He urged the government to work out agreements with manufacturers to preserve such a type of dual operation for at least 10 years or for "several generations if necessary."

- In the big drive to increase copper production, the Copper Cities Mining Company agreed to undertake a \$15.2 million expansion program. This would increase production substantially at its Gila County, Ariz., mine. An agreement with

(Continued on page 244)



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RCA Sound Systems save time . . . speed production efficiency . . . improve employee morale . . . expedite shipping . . . provide instant communication with anyone and everyone in emergencies.

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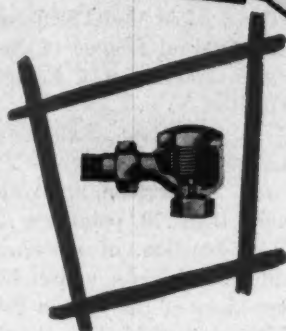
For complete information, contact your nearest RCA Sound Products distributor, or write to: Sound Products, Department 13W, RCA Camden, New Jersey.



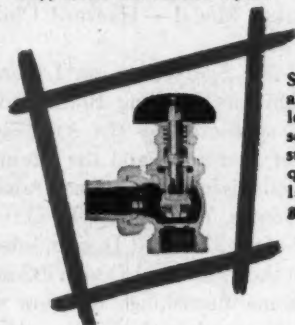
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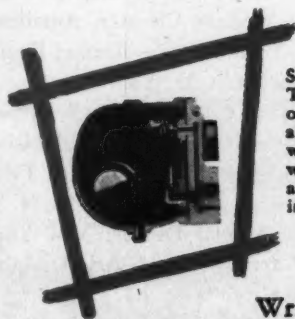
Schools from Coast to Coast



Sarco Radiator Trap, type H, for 30 years the standard on all types of two-pipe steam heating systems. Sizes $\frac{1}{2}$ " to 1", angle, straight-way, offset and vertical styles.



Sarco Radiator Valve, available in spring-packless style as illustrated; also in the bellows-packless style. Sizes $\frac{1}{2}$ " to $1\frac{1}{2}$ ", quick opening and modulating types; angle or globe.



Sarco Float-Thermostatic Trap, type FTL for end-of-main and riser drips; also unit heaters and hot water generators. Fitted with Sarco thermostatic air vent. Air binding is impossible.

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Florida	Haines City	Junior-Senior High School
Idaho	Coeur D'Alene	Coeur D'Alene School
Illinois	Freeport	Junior High School
Illinois	Lincolnwood	Lincolnwood Elementary School
Illinois	Wauconda	Wauconda Township High School
Indiana	Mishawaka	Bremen School
Iowa	Cedar Rapids	Buchanan Elementary School
Louisiana	Bogalusa	Bogalusa High School
Maryland	Baltimore	Edison-Barton-Mergenthaler High School
Massachusetts	Taunton	New School for Feeble Minded
Michigan	Galesburg	Galesburg School
Mississippi	Gulfport	Northeast Ward Elementary School
New Hampshire	Lebanon	Canaan Elementary School
New Jersey	Lakewood	Public School No. 5
New Jersey	Newark	Dayton Street School
New Jersey	Passaic	Grant School No. 7
New York	Bronx	Junior High School No. 125
New York	Brooklyn	Junior High School No. 14
New York	New York	Public School No. 192
New York	Roslyn	East Hills Elementary School
New York	Stony Brook	Stony Brook Elementary School
North Carolina	Lumberton	Pembroke-Rowland School
Ohio	Cleveland	Case Institute of Technology
Ohio	Lyndhurst	Anderson Road School
Oregon	Eugene	Eugene High School
Pennsylvania	Annaville	Lebanon Valley College
Pennsylvania	Franklin County	Mainsville Elementary School
Pennsylvania	Williamsport	Williamsport Jr. High School
Pennsylvania	York	York Township Elementary School
Tennessee	Nashville	Gallatin High School
Texas	Austin	Casis School
Texas	Waco	Waco High School
Utah	Salt Lake City	West High School (Gymnasium)
Washington	Richland	Chief Joseph High School

and many, many other schools

**ALWAYS
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SARCO**

354

THE RECORD REPORTS

(Continued from page 242)

the government provides that Copper Cities will buy additional equipment to mine and treat the ore. This will enable it to supply approximately 22,500 tons of the metal per year. The Defense Materials Procurement Agency agreed to purchase up to 170 million of the first 192.5 million pounds of copper produced at 23 cents a pound providing the concern cannot sell it to other domestic purchasers at a higher price. The new

copper facilities are expected to start production in October 1954.

ON THE CALENDAR

Nov. 1-2: Ninth Ann Arbor Conference, "Changing Community Patterns as a Result of Community Relocation"

— College of Architecture and Design, University of Michigan, Ann Arbor, Mich.

Nov. 1-2: 15th Annual Time and Motion Study and Management Clinic, sponsored by the Industrial Management Society — Sheraton Hotel, Chicago.

Nov. 1-3: 37th Annual Convention, Florida Association of Architects — Roosevelt Hotel, Jacksonville, Fla.

Nov. 1-3: Fall Meeting, Virginia Chapter, American Institute of Architects — Hotel Natural Bridge, Natural Bridge, Va.

Nov. 12-Dec. 6: Gold Medal Sculpture Exhibit, Architectural League of New York — League building, 115 E. 40th St., New York 16, N. Y.

Nov. 14-28: Building Exhibition, Olympia, London.

Nov. 14-Jan. 13: Matisse, an exhibition of more than 70 paintings, 31 sculptures, a selection of drawings, prints and illustrated books, undertaken with the assistance of the French government — Museum of Modern Art, 11 W. 53rd St., New York 19, N. Y.

Nov. 20: Meeting of the Boston Society of Architects; award of the Harleston Parker Medal — Harvard Club, Boston, Mass.

Nov. 27-28: Symposium on Laboratory Design for Handling Radioactive Materials, sponsored by the American Institute of Architects and the Atomic Energy Commission — National Academy of Sciences, Washington, D. C.

Nov. 28-Jan. 27: Good Design, selections from the 1951 Good Design exhibition of home furnishings on view in Chicago throughout the year — Museum of Modern Art, 11 W. 53rd St., New York 19, N. Y.

Dec. 8: Craftsmanship Awards meeting, West Virginia Chapter, American Institute of Architects — Daniel Boone Hotel, Charleston, W. Va.

Dec. 7-Feb. 24: American Sculpture Today, national competitive exhibition — Metropolitan Museum of Art, Fifth Avenue at 82nd St., New York 28, N. Y.

Dec. 18: Annual Dinner, New York Society of Architects — Hotel McAlpin, New York City.

Jan. 4-Feb. 9: Walter Gropius: comprehensive exhibition of the life work of Gropius, architect and professor of architecture at Harvard; photographic coverage, models and paintings by Bauhaus contemporaries — The Institute of Contemporary Art, 138 Newbury St., Boston, Mass.

(Continued on page 246)



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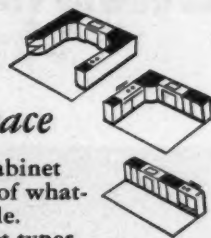
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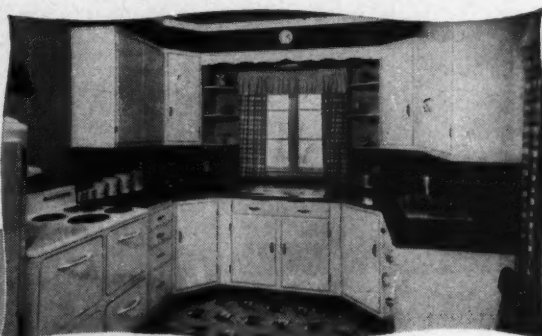
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Yes, Curtis kitchen cabinet units make the most of whatever space is available. With 20 basic cabinet types and a total of 70 sizes to choose from, you can create a kitchen of any size or shape. The dimensions of all units have been standardized to coordinate with other standard kitchen equipment.



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Curtis wood cabinets are the result of years of research and experience to develop comfort-creating, step-saving, modern kitchens. Counters are of correct height. Toe space is ample. Greater storage space is achieved by special Curtis construction. Labor-saving cabinets "fit around" corners—pan trays, ventilated vegetable drawers, snack bars, are easy to reach, easy to clean.



friendly to pocketbooks

The fine cabinetry of Curtis kitchen units assures lifetime service. Drawers are completely dovetailed—not merely rabbeted and nailed. Hardware is furnished and applied. Curtis wood kitchen units come primed in white so that one finish coat, in any desired color, completes the job.



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THE RECORD REPORTS

(Continued from page 244)

Jan. 8-10: Annual Meeting and election of officers, National Constructors Association — Waldorf-Astoria Hotel, New York City.

Jan. 12: Annual Meeting, Alabama Society of Architects — Birmingham, Ala.

Jan. 14-17: Plant Maintenance Show — Convention Hall, Philadelphia.

Jan. 14-Feb. 7: Gold Medal Exhibit

of architectural works, Architectural League of New York — League building, 115 E. 40th St., New York 16, N. Y.

Jan. 16-18: Eighth Annual National Technical Conference — Edgewater Beach Hotel, Chicago.

Jan. 16-Mar. 9: Buildings by Frank Lloyd Wright; three-dimensional color photographs set in individual viewers to show the office building and recently

completed research tower designed by Frank Lloyd Wright for the Johnson Wax Co., Racine, Wisc. — Museum of Modern Art, 11 W. 53rd St., New York 19, N. Y.

Jan. 20-24: Eighth Annual Convention and Exposition, National Association of Home Builders — Stevens and Congress Hotels, Chicago.

Jan. 30-Apr. 20: Prints by Modern Masters: large exhibition of important work in the graphic arts — Museum of Modern Art, 11 W. 53rd St., New York 19, N. Y.

Ludowici Tile Roof on modern school

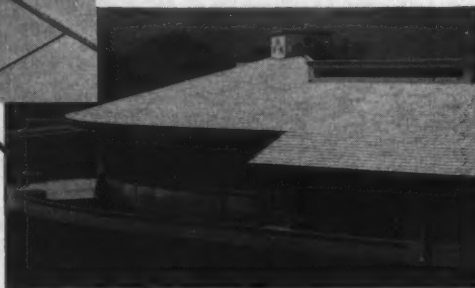


Tilton Grade School, Rochelle, Ill. Raymond A. Orput, Architect, Rockford, Ill.

Roof is laid with ludowici light-weight smooth white interlocking shingle tiles.

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white tile roof on this new school is unusually pleasing against the verdant green of the land or the warm colors of the seasons. It will last long and shelter many generations of children. It will require no maintenance and because it is tile, and imperishable, it has all the elements of protection. This beauty and economy is available for many kinds of roofs.



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OFFICE NOTES

Office Openings

• Josh C. Bennett Jr., Architect, and W. Dudley Hunt Jr., Associate, have announced the opening of an office for the practice of architecture at 122 E. 10th St., Anniston, Ala.

• Morton Z. Levine, Architect, has opened a new office at 110 S. Dearborn St., Chicago, Ill.

• The recently established Atlantic District of the Army Engineer Corps has opened temporary headquarters at 80 Lafayette St., New York City. The new district, under jurisdiction of the North Atlantic Division, will handle off-continent military construction projects in the Atlantic, from Bermuda north, except projects otherwise assigned.

New Firms, Firm Changes

• Henry S. Churchill, F.A.I.A., A.I.P., has announced the dissolution of his partnership with Kline Fulmer. Mr. Churchill, who will continue to have offices at 19 W. 44th St., New York 18, N. Y., will be available as a consultant for redevelopment, housing and subdivisions, large-scale planning and city planning.

• The architectural firm of Kirby and Mulvin has announced that Ralph Priestley, A.I.A., has become an associate of their firm. Mr. Priestley has resigned as dean of engineering at California State Polytechnic College.

• Ray Stuermer and Vernon Pietz have announced the formation of a partnership for the practice of architecture, with offices at 203 N. Wabash Ave., Chicago.

(Continued on page 248)

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THE RECORD REPORTS

(Continued from page 246)

New Addresses

The following new addresses have been announced:

Weston Holt Blake, Architect, 903 Jefferson St., Wilmington, Del.

Edward O. Blodgett, Architect, 251 Kearney St., San Francisco 8, Calif.

Pierre Blouke, Architect, 53 W. Jackson St., Chicago, Ill.

Rose Connor, Architect, 170 E. California St., Pasadena 2, Calif.

Irving Dickstein, Architect, 307 Alma St., Palo Alto, Calif.

Bernhard Dirks, Architect, Mohawk Trail, Greenfield, Mass.

Matthew B. Ehrlich, Architect, Earle Theater Building, 1028 Market St., Philadelphia 7, Pa.

Carroll W. Everett, Architect, York and Sawyer, 101 Park Ave., New York, N. Y.

William G. Harvard, Architect, 2714 9th St., N., St. Petersburg, Fla.

Michael M. Kane, Architect, 12381 Cedar Rd., Cleveland Heights 18, Ohio.

Long & Gatling, Architects, 1640 Brown-Marx Bldg., Birmingham 3, Ala.

Max M. Sandfield, Architect, 4013 Cedar Springs, Dallas, Tex.

Harold E. Woodward, Architect, 150 Archer St., Spartanburg, S. C.

Paul D. Woodward, Architect, 716-A Bousch St., Norfolk, Va.

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AT THE COLLEGES

Hebrew Technion Seeking Expanded Teaching Staff

In line with the urgent need for engineers and architects in the growing state of Israel, the Hebrew Institute of Technology at Haifa is now seeking to expand its teaching staff in nearly all departments.

The American Technion Society, 154 Nassau Street, New York City, reports that openings exist for a professor or associate professor of architecture; for associate professors and other staff for the three divisions of the Faculty of Civil Engineering—Buildings and Structures, Public Works, Hydraulic Engineering; professors, lecturers and instructors for the faculty of mechanical engineering.

More teaching personnel is also required for the newly-established faculty of science.

Some assistantships of many which are open will enable the holders to carry on research and to study for higher degrees.

To the right candidates for posts in the higher grades, the Technion offers lifetime contracts, with a pension scheme on retirement. It will pay their fares and their families' and transportation charges for their personal effects to Israel. It will also see to it that they get proper housing, etc.

Convocation Sees Shortage Of Engineers as Alarming

The need for public recognition of the crisis in engineering manpower was stressed in all the sessions of a day-long convocation recently arranged by the Engineering Manpower Commission of the Engineers Joint Council and the En-

(Continued on page 250)



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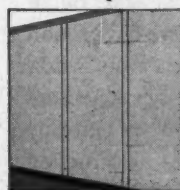
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THE RECORD REPORTS

(Continued from page 248)

gineers Society of Western Pennsylvania.

The convocation, held on the campus of the University of Pittsburgh because of Pittsburgh's proximity to major industrial centers, attracted some 600 representatives of American industry, the engineering profession, college educators and Pittsburgh secondary schools.

The engineering profession itself was called upon to "broadcast" the facts

about the "alarming" shortages of engineers in local communities and a program for attracting new personnel was outlined.

Also outlined was a program for the utilization and strengthening of the engineering profession for the guidance of the military. The military establishment was cautioned not to call those in critical engineering positions without due regard for the importance of their present

service. It was stressed that enlisted and officer reservists whose training qualifies them as engineers should be used in assignments only engineers can fill.

At the same time industry was urged to use engineers only in jobs which require engineers and not to hold young engineers in "interne" positions any longer than necessary; engineers should be moved to positions of maximum responsibility.

The Engineering Manpower Commission said the pattern of utilization of engineers must be greatly modified if vitally necessary engineering work is to be accomplished with the limited numbers of engineers available.

Speakers included G. A. Shoemaker, president and acting chairman of the Engineers Society of Western Pennsylvania and vice president of the Pittsburgh Consolidation Coal Co.; A. C. Monteith, vice president of Westinghouse Electric Corp.; S. C. Hollister, dean of Cornell University; M. H. Trytten of the National Research Council; C. H. Brown, manager of engineering and manufacturing services of Eastman Kodak Co.; Adm. Ben Moreell, president of Jones and Laughlin Steel Corp.; Gen. C. E. Dargusch (Ret.), legal counsel for the Engineering Manpower Commission; Dr. Douglas Brown, dean of faculty at Princeton University and member of the Committee on Specialized Personnel; and Dr. P. N. Powers, assistant to the president of the Monsanto Chemical Co. and former secretary of the Scientific Manpower Committee.

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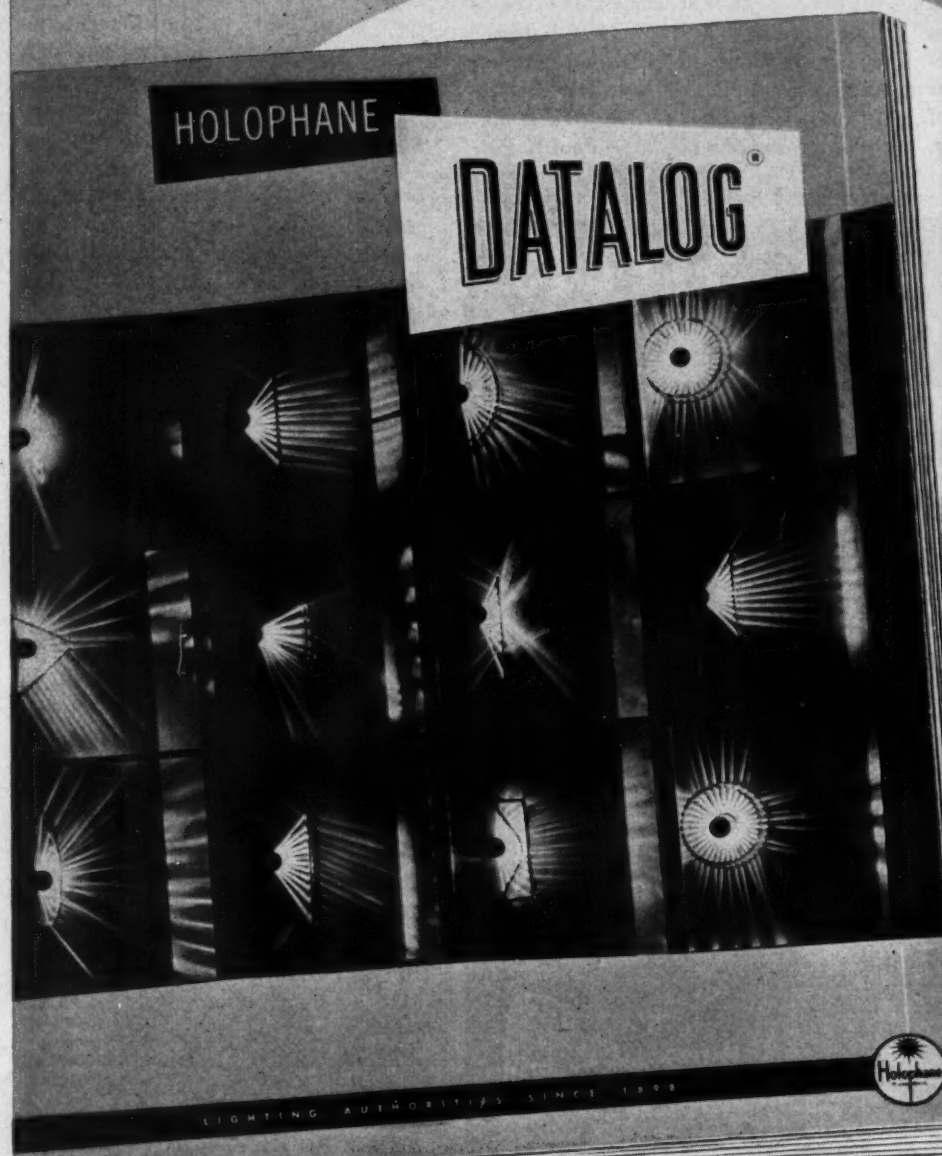
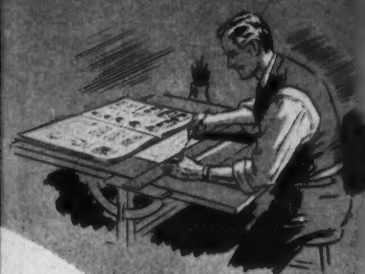
Lincoln Foundation Awards Annual Engineering Prizes

Engineering honors and cash awards totaling \$5000 have been given by the Lincoln Arc Welding Foundation of Cleveland to 63 young engineers in 28 states, representing 34 engineering schools. Funds totaling \$1750 were also awarded to three engineering schools to establish scholarships in honor of and named for the engineers receiving the main awards.

The awards were made in the fourth annual competition of the Foundation's Engineering Undergraduate Award and Scholarship Program. The program offers awards for papers by engineering undergraduates on the design, fabrication, research or maintenance of structures or machines in which arc welding is used. The Foundation is sponsoring a 10-year series of programs to encourage

(Continued on page 252)

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THE RECORD REPORTS

(Continued from page 250)

undergraduate engineers to use "imagination and ingenuity" in developing engineering projects.

Major awards were made as follows:

First Award, \$1105.03 — Hugh M. Rush, for his paper, "Hydraulic Cranes for Military Vehicles." Purdue University will receive \$1000 to establish four scholarships in the Department of Mechanical Engineering, in which Mr.

Rush was enrolled when he prepared his award paper.

Second Award, \$552.20 — Walter H. Halstead, for his paper "A Comparison of Riveted and Welded Design on a Through Plate Girder Railroad Bridge." Lafayette College receives \$500 to establish two scholarships in the Department of Civil Engineering in his honor.

Third Award, \$276.25 — Paul E. Pot-

ter, for his paper, "An All-Welded Steel Bridge." Oregon State College receives \$250 for a scholarship in the Department of Civil Engineering.

Scholarships, Fellowships

- An endowment fund to award full tuition scholarships to students entering the college of engineering has been established at Lehigh University by York Shipley Inc. of York, Pa. The scholarships will be awarded on the basis of financial need, character, personality and scholastic achievements. Preference will be given applicants from York County who wish to enroll in the mechanical engineering program. The first two awards already have been made — to Paul E. Klinedinst of York and Clifford Trout of Neptune, N. J.

- The Department of Landscape Architecture of Harvard University offers to those eligible for admission as regular students a scholarship for the next academic year with an income of \$600, equal to the tuition fee. Students who have received a B.A. within the past four years and June 1952 candidates are eligible. Award will be made on the basis of scholastic standing and evidence of interest in the field of landscape architecture. The curriculum includes design of areas of land for human use and enjoyment — broad scale physical planning, civic design, housing, parks and parkways. Queries, which are due by December 1, 1951, should be addressed: The Chairman, Department of Landscape Architecture, Robinson Hall, Harvard University, Cambridge 38, Mass.

- The Acoustical Materials Association Fellowship in Acoustics at the Massachusetts Institute of Technology for 1951-52 has been awarded to Kenneth W. Goff of Weston, W. Va. Mr. Goff is working on special techniques for applications to correlational methods.

Faculty Appointments

- The Department of Architecture of the University of Illinois, Urbana, Ill., has announced the appointment of Ambrose M. Richardson as professor of architecture. A graduate of Illinois Institute of Technology, Professor Richardson has been associated with the architectural firm of Skidmore, Owings and Merrill in the Chicago office since 1945 and, prior to service in the Army

(Continued on page 254)

FACTS FOR ARCHITECTS

ABOUT "CONSTRUCTION BY ADHESION" *


**HERE ARE NEW METHODS
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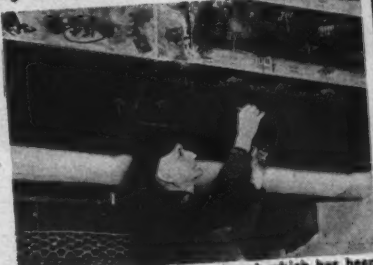
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2. Plaster applied over wire and cork which has been attached to aluminum ducts using MIRACLE ADHESIVE and MIRACLE SPINDLE ANCHORS at John Hancock Mutual Life Insurance Co. Building, Boston, Mass. ARCHITECT, Cram and Ferguson, BUILDER, Turner Construction Co.

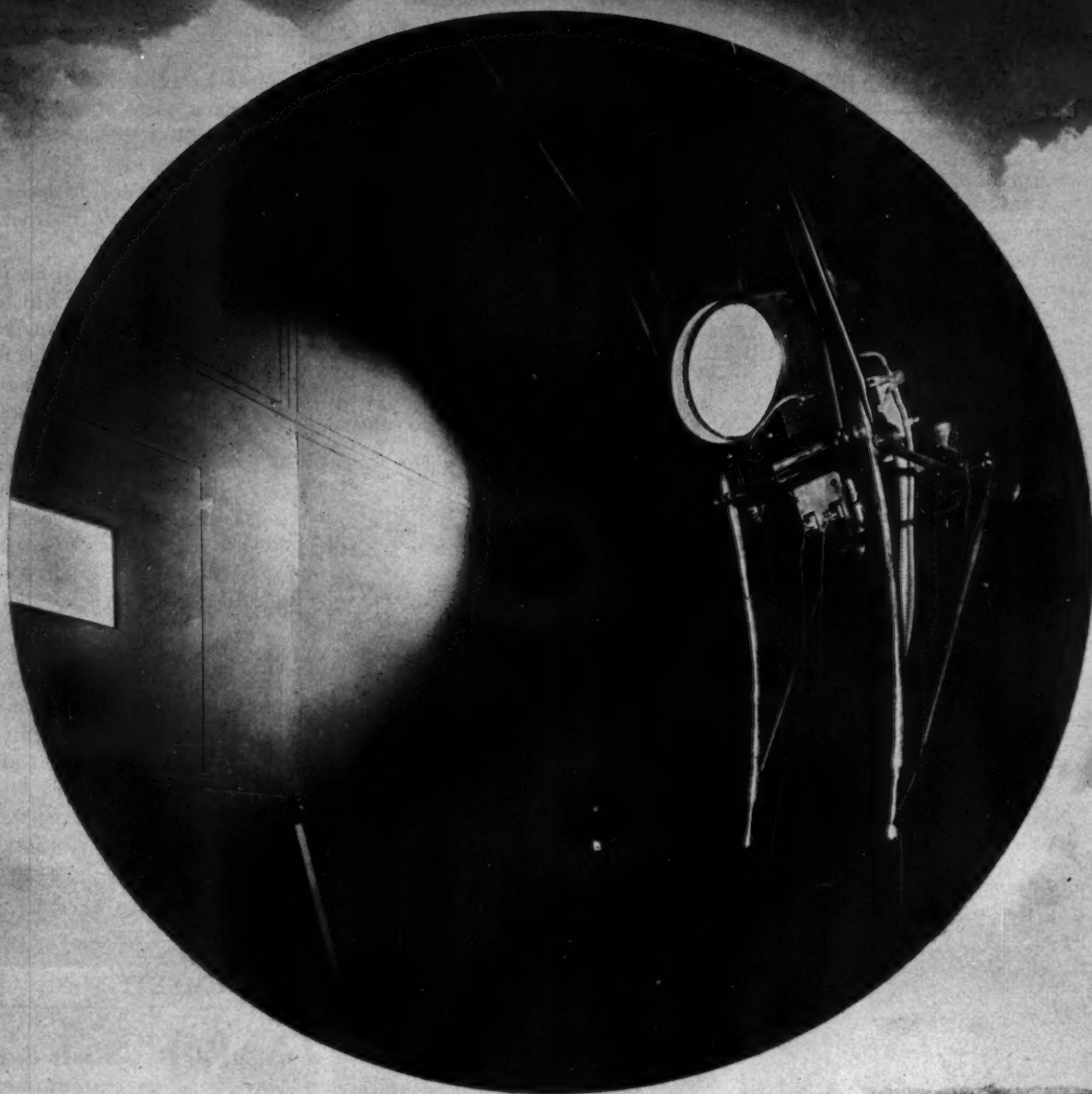


3. FIBERGLAS insulation, Type PF-613, 2" thick — bonded to concrete ceiling using MIRACLE PRONGED ANCHORS at Radio City Studio 6B, New York, N. Y. CONTRACTOR, William J. Scully, Inc., New York, N. Y.



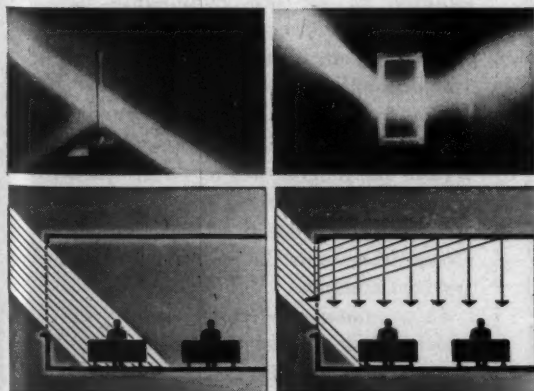
4. WOOD RUNNERS installed on concrete floors with MIRACLE ADHESIVE and MIRACLE ANCHOR NAILS to support 2" solid partitions. Washington Circle Apartments, Washington, D.C. GENERAL CONTRACTOR, Charles H. Tompkins Company.

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INSULUX FENESTRATION SYSTEMS

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THE RECORD REPORTS

(Continued from page 252)

Engineer Corps during World War II, from 1938 to 1941. He is now on indefinite leave. Professor Richardson will take charge of the department's graduate courses in architectural design and will also conduct graduate courses in advanced planning techniques and urban housing.

The Department has also announced the appointment of John G. Replinger as

instructor in design. Mr. Replinger has for the past year been research associate assigned to the Chicago Architectural Archives project, in which the University of Illinois and the Art Institute of Chicago are cooperating.

- The School of Design of North Carolina State College announces the appointment of Hugo Leipziger-Pearce as

professor of architecture; Eduardo F. Catalano, associate professor of architecture; Roy Gussow, assistant professor of design; Leslie J. Laskey and Louis Tavelli, instructors in design; and Kenneth McCoy Scott, instructor in architecture.

Lewis Mumford, visiting professor for the past three years, will return for a fourth year. Other visiting lecturers will be Alden B. Dow, R. Buckminster Fuller, Ludwig Mies van de Rohe, Pietro Belluschi and Naum Gabo.

- Howard K. Menhinick, director of regional studies with the Tennessee Valley Authority, has been appointed Regents' Professor of City Planning in the School of Architecture at the Georgia Institute of Technology.

- Appointments to the staff of Pratt Institute have been announced as follows: John Johansen, to teach design analysis; Sidney Katz, Robert Hays Rosenberg and Raniero Corbelletti, to teach design; Mrs. Sibyl Moholy-Nagy to teach history of architecture; Douglas Haskell, to be a visiting lecturer in theory.

14 in the ENTRANCES to The CALIFORNIA COMPANY BUILDING

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COMPETITIONS

N. A. H. B. Contest Entries Are Due by November 15

Entries in the fourth annual "Neighborhood Development Contest" sponsored by the National Association of Home Builders are due in Washington November 15.

The contest is intended to give recognition to the best community developments and housing projects constructed by members of the N.A.H.B.'s 180 local affiliated associations.

For single-family homes, garden apartments, shopping centers, 70 per cent of the judging will be on site planning and layout features and 30 per cent on architectural design of the buildings. Construction must be approximately 25 per cent complete.

In community development projects which include a variety of dwelling types, shopping centers and other community facilities, weight of 40 per cent will be given for the community plan and layout features, 30 per cent for the existence of or provision for various community facilities, and 30 per cent for architectural design. Construction on such

(Continued on page 256)



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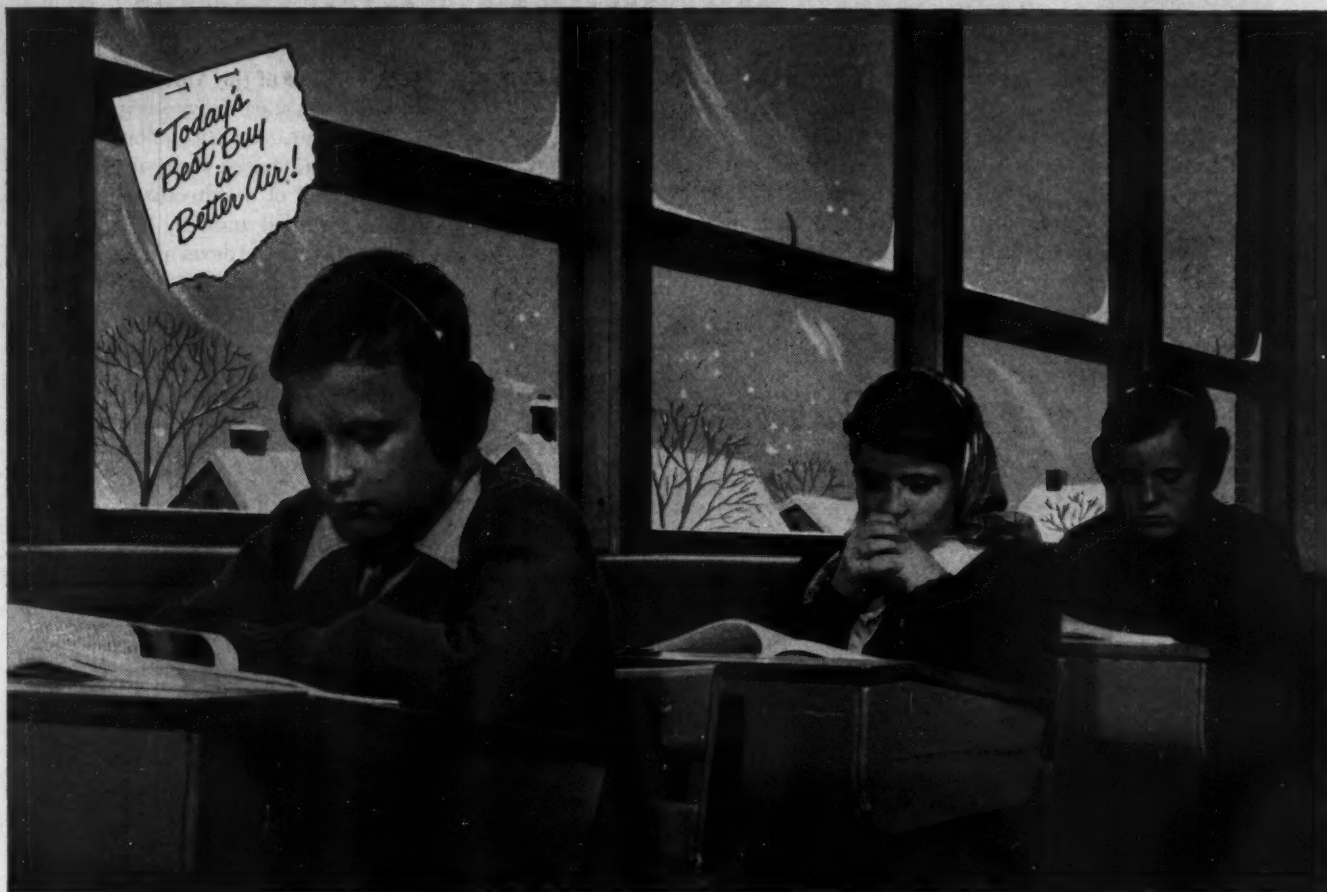


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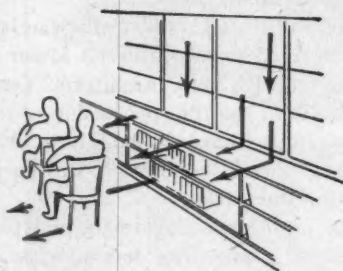
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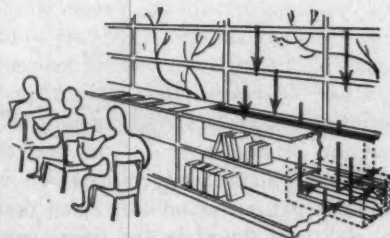
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THE RECORD REPORTS

(Continued from page 254)

entries must be approximately 10 per cent complete.

Entries should take the form of exhibits showing maps, layouts, floor plans and photographs. General information on the selling price of houses and improved lots, rentals per room, with lists of utilities and services provided, size of trade area, store and parking area,

number of car spaces, etc. for shopping centers must be included in the mounted exhibits.

Winners will be selected by a jury composed of leaders in land and community development, and will be presented with scrolls at the N.A.H.B.'s January convention in Chicago. The exhibits will be on display there.



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Applications Invited for 1952 Brunner Scholarship

Applications for the 1952 Brunner Scholarship will be accepted by the New York Chapter of the American Institute of Architects until November 15.

The grant, for an amount up to \$2400, for advanced study in some specialized field of architectural investigation, is awarded annually by the Chapter "to further the development of architecture in the United States." The subject of the study may be chosen by each candidate.

The recipient will be selected entirely on the basis of his individual merits as shown by proofs of his eligibility, by the value and practicability of his chosen subject, his previously recorded capacity for study, his character, ability, purpose and promise. There is no formal competition.

Any citizen of the United States who has an advanced professional background and is engaged in the profession of architecture and its related fields may apply. Further information is available from the Chapter office, 115 East 40th St., New York 16, N. Y.

"Centerpiece" Is Sought for 1952 Indianapolis Home Show

Architects, architectural designers, draftsmen and architectural students of the nation have been invited to enter a competition to design a house to be built as the "centerpiece" of the 1952 Indianapolis Home Show.

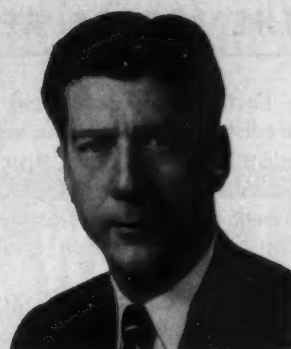
The competition, which was won last year by 25-year-old Ewing H. Miller of Miller and Vrydagh, Architects, Terre Haute, Ind., has the sponsorship of the American Institute of Architects. Edward D. Pierre, F.A.I.A., is serving as architectural adviser.

The problem is the design and plot layout of a one-story house, with or without basement, to contain not more than 1600 sq ft floor area. The house must have three bedrooms and "suitable spaces" for living, dining room or alcove, kitchen, laundry, general utility and storage. A two-car garage is required, but it and any porches are to be included in area footage at 50 per cent of actual floor area. Basement, if any, is not to be included in footage. The program stipulates that "the use of modular planning and construction is desirable but not mandatory" and that suitability of the style and living convenience and construction for the mid-western location shall be considered.

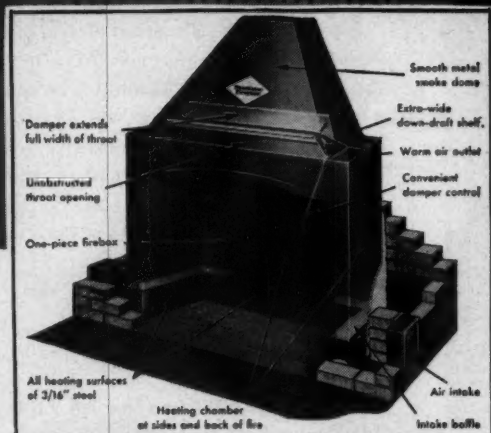
(Continued on page 258)

"A Heatilator Fireplace cuts my supervision time way down!"

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THE RECORD REPORTS

(Continued from page 256)

Factors to be considered in judging are listed as follows: plan arrangement; adequate use of space; structural practicability; adequacy of equipment; external appearance; effective presentation; suitability as an exhibit centerpiece.

The Indianapolis Home Show plans to build the winning design in the Mall of the Manufacturers' Building, Indiana State Fairgrounds, for the duration of

the Exposition, April 18-27, 1952.

Entries in the competition must be postmarked not later than midnight on December 16. The award will be announced January 10 and the winners notified and paid immediately afterwards.

These awards will be made: first prize, \$500; second prize, \$100; third prize, \$50; fourth prize, \$50.

Required application forms may be

obtained by addressing Mr. E. D. Pierre, architectural adviser, c-o J. F. Cantwell, managing director, Indianapolis Home Show Inc., 1456 N. Delaware St., Indianapolis 2, Ind.

Five Group Contests Planned For '52 Lighting Merit Awards

Five separate competitions will be held to choose the recipients of the Merit Award Certificates and 25 \$100 prizes in the competition sponsored by the Fourth International Lighting Exposition and Conference.

Architects and consulting engineers will be judged in one of the five groups. Others are: electrical contractors, utility lighting and power representatives, electrical distributors' lighting specialists and salesmen, and owners and users of industrial and commercial lighting.

The competition closes January 31. Requests for official rules and entry blanks should be sent to the Merit Award Committee, 4th International Lighting Exposition and Conference, Room 818, 326 W. Madison St., Chicago 6, Ill.

Awards will be conferred at one of the sessions of the Conference, May 6-9 in the Cleveland Auditorium at Cleveland, where successful entries will be exhibited. The Conference is sponsored by the Industrial and Commercial Lighting Equipment Section of the National Electrical Manufacturers Association.

AWARDS

UN Building Gets One of Two "Office of the Year" Awards

The United Nations Secretariat Building in New York and the Chicago offices of Foote, Cone & Belding were selected to receive the annual "Office of the Year" awards for 1951 at a luncheon in New York last month.

The awards, given last year for the first time, were based this year on a poll conducted by the sponsor, *Office Management and Equipment Magazine*, among architects, decorators and management engineers. They are given to offices in two categories—for more than 500 employees and for less than 500—which are chosen as outstanding in design, layout and equipment.

Architects as well as owners of the winning offices were honored at the award luncheon: for the United Nations Building, Harrison and Abramovitz, Ar-

(Continued on page 260)



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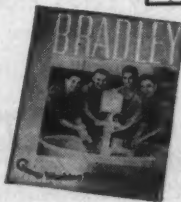
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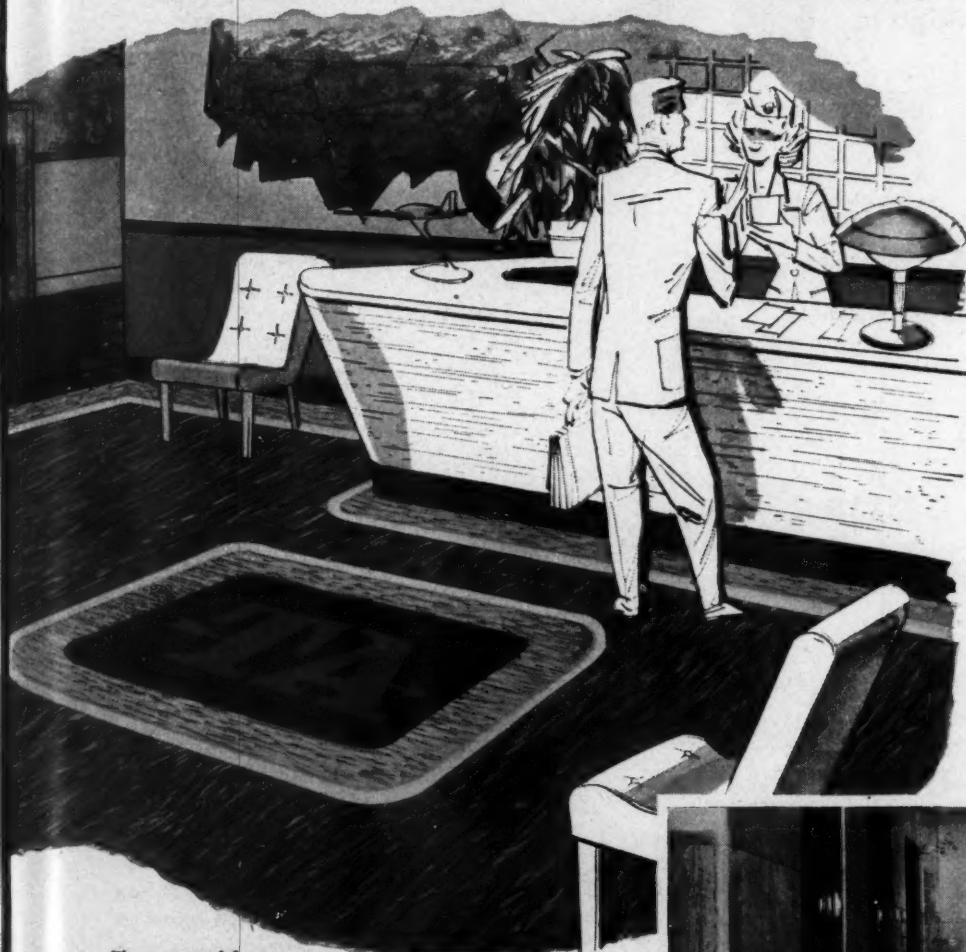
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THE RECORD REPORTS

(Continued from page 258)

chitects, New York; for the Foote, Cone & Belding offices, Friedman, Alschuler & Sincere and Harper Richards, Chicago.

In addition to the plaques for winners, Certificates of Honorable Mention were awarded to two offices in each category. Certificates for offices employing more than 500 went to the offices of the Farm

Bureau Insurance Companies, Columbus, Ohio — Benham, Richards & Armstrong of Columbus, architects; and Dun & Bradstreet, Inc., New York — Reinhard, Hofmeister & Walquist of New York, architects. For offices employing fewer than 500, certificates were awarded to the First National Bank of Tulsa — Carsin & Lundin of New York, archi-

tects; and the Northwestern Mutual Fire Association offices in Los Angeles — Richard J. Neutra of Los Angeles, architect.

Parents' Magazine Announces Winners of Home Competition

Winners of the annual builders' competition for the 1950 "Best Homes for Family Living" have been announced by the sponsor, *Parents' Magazine*.

The National Merit Award went to Jere Strizek of Jere Strizek Inc., Sacramento, builders, for a house for Mr. and Mrs. R. C. Bovey, designed by John W. Davis, also of Sacramento.

The awards are offered in each of five geographical regions in two price classifications — houses under \$16,000 and houses sold for prices ranging from \$16,000 to \$25,000.

This year only one award was made in the higher price category — to Robert C. Davenport, president, Hollin Hills Inc., Alexandria, Va., builder, for a house for Mr. and Mrs. Howard West, Charles M. Goodman Associates, Washington, D. C., architects.

In the lower price category, awards were made as follows:

B. V. Zamore, president, Zamore Builds Inc., Waldwick, N. J., builder; house for Mr. and Mrs. George Moll, Waldwick, N. J.; Harvey P. Clarkson, A.I.A., New York, architect.

Robert C. Davenport, president, Hollin Hills Inc., Alexandria, Va., builder; house for Mr. and Mrs. Alex Radin, Hollin Hills, Alexandria, Va.; Charles M. Goodman Associates, Washington, D. C., architects.

Albert Balch, Community Builder & Realtor, Seattle, builder; house for Mr. and Mrs. E. F. Stephens, Seattle; W. A. Wollander, c-o Carroll Hedlund & Associates, Seattle, architect.

Jere Strizek (the National Merit Award winner).

Fritz Burns, Kaiser Community Homes, Los Angeles, builder; house for Mr. and Mrs. H. S. Burns (not related to builder), Los Angeles; Henry J. Friel, Los Angeles, architect.

The awards were made to the homes the judges felt provide "the greatest livability" for an American family with two or more children and were judged on the basis of arrangement, use of space, storage facilities and provision for equipment. Also taken into consideration were the usefulness of the site as planned for outdoor family activities, durability, convenient use, simplicity of maintenance, attractive architectural

(Continued on page 262)

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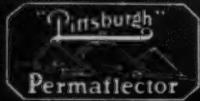
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THE RECORD REPORTS

(Continued from page 260)

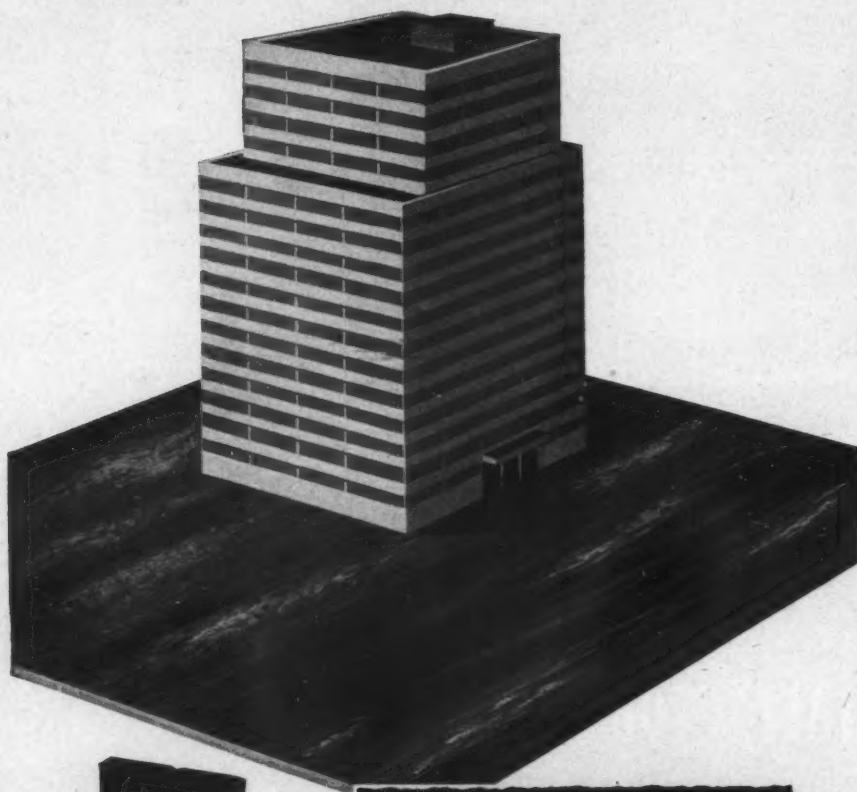
design, structural soundness and quality of workmanship.

The Jury of Award was headed by Richard Bennett, A.I.A., of Loeb, Schlossman and Bennett, Architects, and included Leonard Haeger, A.I.A., building materials expeditor for the National Association of Home Builders, acting for W. P. Atkinson, N.A.H.B.

president; William H. Scheick, A.I.A., executive director, Building Research Advisory Board, National Research Council; and Mrs. Maxine Livingston, Family Home Editor, *Parents' Magazine*.

Awards will be presented formally to the builders of the award-winning houses during the convention of the N.A.H.B. at Chicago in January.

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Plaques Awarded to Honor "Most Beautiful" Bridges

Three bridges selected as the most beautiful steel bridges opened to traffic in the United States during 1950 have been awarded stainless steel plaques by the American Institute of Steel Construction.

The winners in the contest, which has been conducted annually by the Institute since 1928, were selected by a jury of architects and engineers from a field of 97 entries, more than double the number of entries last year.

The winners were:

Class I, for bridges with spans of 400 ft or more — Columbia River Bridge, Wenatchee, Wash. Owner, State of Washington Department of Highways; designer, George Stevens, bridge engineer, State of Washington Department of Highways; fabricator, American Bridge Company.

Class II, for bridges with spans under 400 ft, costing over \$500,000 — South Holston River Bridge, on Tennessee State Highway 34, Sullivan County, Tenn. Owner, State of Tennessee; designer, Tennessee Valley Authority; fabricator, Virginia Bridge Company.

Class III, for bridges with spans under 400 ft, costing less than \$500,000 — Caldwell Avenue Bridge, over Edens Expressway, Cook County, Ill. Owner, Cook County, Ill.; designer Cook County Highway Department, J. Edwin Quinn, architect; fabricator, Bethlehem Steel Company.

Bronze plaques will be given for six bridges which received honorable mention.

Members of the award jury were: Glenn Stanton, president of the American Institute of Architects; Prof. Carlton T. Bishop, School of Engineering, Yale University; Rene d'Harnoncourt, director, Museum of Modern Art, New York City; Albert Kruse, architect, Wilmington, Del.; Alfred Shaw, architect, Chicago.

• Students from Oklahoma A. & M. College won the ARCHITECTURAL RECORD prizes and the six Second Medal awards in the Beaux Arts Institute of Design Class A Problem IV competition. The problem, written by Walther Prokosch, architect, of New York, was an airport terminal building.

R. L. Robinson was awarded Second Medal and first ARCHITECTURAL RECORD prize; L. G. Ost Jr., Second Medal and second ARCHITECTURAL RECORD

(Continued on page 264)



Bus Terminal Building, Port of New York Authority, Turner Construction Co.—Contractor

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THE RECORD REPORTS

(Continued from page 262)

prize. Other recipients of Second Medal were D. L. Adamson, L. J. Dellaport, J. L. Samuelson, D. W. Williams.

- The American Society of Mechanical Engineers has named Thomas Roy Jones, president of Daystrom Inc., Elizabeth, N. J., as the 1951 winner of the Henry Laurence Gantt medal for "distinguished achievement in industrial

management as a service to the community."

ELECTIONS APPOINTMENTS

- Officers of the Architects Association of Illinois have been reelected to serve

for another year. They are: Edward A. Kane, Edwardsville, president; John Fugard Jr., Chicago, vice president; Edgar E. Lundeen, Bloomington, secretary-treasurer. The A.A.I. consists of delegates from the three Illinois chapters of the American Institute of Architects: Chicago, Central Illinois and Southern Illinois.

- William M. Collier Jr. of Abilene has been named president of the Fort Worth Chapter of the American Institute of Architects. Mr. Collier, who as vice president last year was the first non-resident of Fort Worth ever to hold office in the organization, now becomes its first non-resident president.

- John D. Lange has been named executive director of the National Association of Housing Officials following the resignation of John M. Ducey. Mr. Lange, in the housing field since 1940, has been for the past three years director of management of American Community Builders, Inc., the firm headed by Philip M. Klutznick that built the new town of Park Forest (ARCHITECTURAL RECORD, May 1951, pages 93 to 125). Earlier he had been assistant community manager of Greendale, Wisc. and had key posts in regional and central offices of the Federal Public Housing Authority and its successor, the Public Housing Administration.

- Russel Wright, New York industrial designer, has been elected president of the Society of Industrial Designers for 1951-52. He succeeds Dave Chapman, Chicago designer. Other new officers are: Carl Bjorncrantz, Chicago, vice president; Jean O. Reinecke, Chicago, secretary; and A. Baker Barnhart, New York, treasurer.

- Katherine Morrow Ford has joined the staff of Knoll Associates, Inc. as head of public relations. Mrs. Ford had been architectural editor and consultant for *House & Garden* magazine from 1945 until her recent resignation. Earlier she had been administrative assistant of the President's Conference on Home Building and Home Ownership and secretary of its Committee on Standards and Objectives; executive director of the national educational organization, Better Homes in America; and administrative assistant of the Research on Slums and Housing sponsored by the Phelps-Stokes Fund. Mrs. Ford has written a number of books on architectural and interior

(Continued on page 266)

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Andersen Gliders—Home in Chappaqua, N. Y.—Joseph Douglas Weiss, architect



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design subjects, including "The Modern House in America," "The Design of Modern Interiors" and the forthcoming "The American House Today."

• Ben Nash, Fellow and past president, has been awarded the Medal for Achievement by the National Board of Industrial Designers Institute. It was presented for his "courage and pioneering, for educational work and personal

(Continued from page 264)

achievement, all in the field of Industrial Design."

EXHIBITIONS

Architectural League Opens Gold Medal Series Nov. 12

An exhibition of sculpture opening November 12 at the Architectural League

of New York will inaugurate the League's 55th annual Gold Medal show.

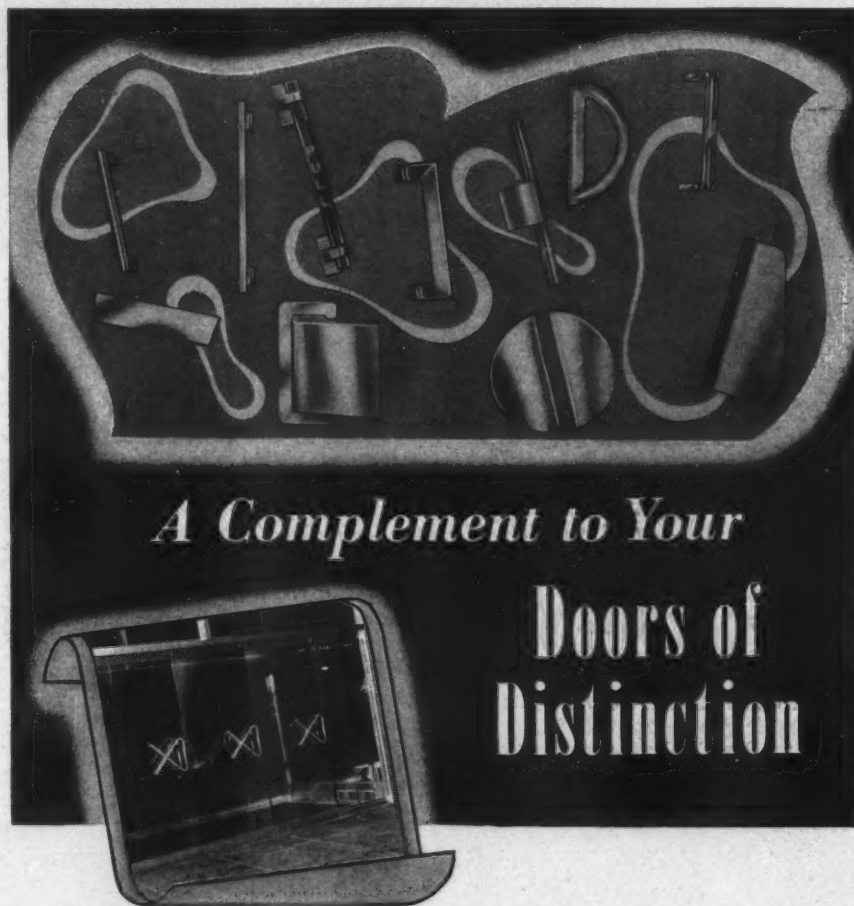
The most outstanding work from the exhibition will be selected by a jury for the Sculpture Gold Medal to be presented at a dinner on November 15.

Next in the series of five Gold Medal exhibits at the League will be the exhibit of architectural works, January 14 to February 7. Deadline for preliminary submission is the second week of November.

Succeeding exhibits will be held as follows: design and craftsmanship in native industrial arts — February 11–March 7; mural painting — March 17–April 4; landscape architecture — April 7–May 2.

The series of individual exhibits will culminate in a comprehensive combined exhibit of all the arts. This final Gold Medal show will be timed to coincide with the annual convention of the American Institute of Architects, to be held June 17–22 in New York City.

Information about making submissions for any of the exhibits may be obtained from Miss Anna Clarke, executive secretary, Architectural League, 115 East 40th St., New York 16, N. Y.



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NEW WILLIAMSBURG MOVIE TELLS RESTORATION STORY

The epic tale of the restoration of Colonial Williamsburg is strikingly told in a new 16 mm. documentary film in color recently released as the first project in a new audio-visual program for Williamsburg.

The 44-minute motion picture, with narration by Actor Walter Abel, can be rented or purchased through the new Film Distribution Section, Colonial Williamsburg, Williamsburg, Va.

"Williamsburg Restored" opens with scenes of reaction in the old city to news of the Boston Tea Party. Later scenes cover the days of the 1920's when the last vestiges of the old city's Colonial heritage were becoming obscured and the idea of restoring it developed between Rev. W. A. R. Goodwin, rector of Bruton Parish Church, and John D. Rockefeller Jr. Mr. Rockefeller, incidentally, appears in the film to portray himself in scenes with the late Mr. Goodwin, played by the rector's son.

The center portion of the film tells the heart of the restoration story; and it takes something over half the running

(Continued on page 268)

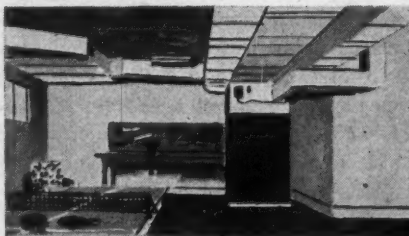
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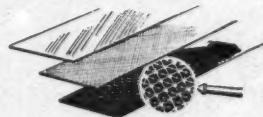
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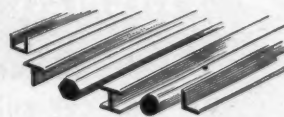
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THE RECORD REPORTS

(Continued from page 266)

time. Most architects will wish it had occupied more; they will also wryly note that while there is painstaking detailing of the incredible architectural difficulties overcome in the process of achieving maximum authenticity in the restoration, the names of Perry, Shaw and Hepburn, the architects who guided it, and their colleagues are not mentioned.

The closing scenes show the city today, with visitors roaming some of its most famous sites.

The film was produced for Colonial Williamsburg by the Julien Bryan International Film Foundation under the direction of Francis Thompson. Except for Mr. Rockefeller, the actors are Williamsburg citizens.



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HOUSTON ARCHITECTS AID SCHOOL DEFENSE PROGRAM

Members of the Houston Chapter of the American Institute of Architects have been helping to spot the best locations in the city's public schools for student shelters in case of air attack.

The activity came out of an offer of the chapter's services to Houston Civil Defense Director A. W. Snyder by the chapter Civil Defense Committee, which includes Talbott Wilson, Stayton Nunn, Herbert Cowell and Maurice Sullivan.

Principals of the city's schools were advised that their schools would be inspected for safety locations if they desired it.

The committee has prepared a check sheet for the inspecting architect, based on information from government sources. When a principal requests an inspection, the Civil Defense Committee attempts to locate the architect who designed the school, or, if the original architect cannot be contacted, an architect who has done work on the school. If neither is available, some member of the chapter is chosen to inspect the school and make recommendations to the principal. The inspecting architect makes an appointment with the principal, examines available plans of the school, makes a tour of the building and submits a report.

AIR FORCE HAS OPENINGS FOR AIRPORT ENGINEERS

Commissions for airport engineering officers are offered by the First Air Force to men with experience in airport design and construction.

Requirements for commissioning, in ranks from first lieutenant to lieutenant colonel, depending on age, include a bachelor's degree in civil engineering or a related field, and active technical experience in engineering design and construction, with particular emphasis on the design, preparation of specifications or construction of airports and highways.

The First Air Force is also seeking "air installation officers," who must have a university degree in architecture or one of the following branches of engineering: architectural, structural, general, civil, mechanical, industrial, or electrical. They also need professional knowledge of accepted engineering practices, preparation of plans and specifications and design and development.

Queries should be addressed to: Department of Military Personnel Procurement, Headquarters, First Air Force, Mitchel Air Force Base, N. Y.

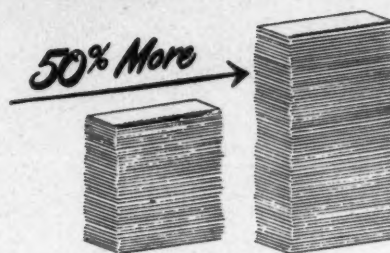
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in every 4 towels
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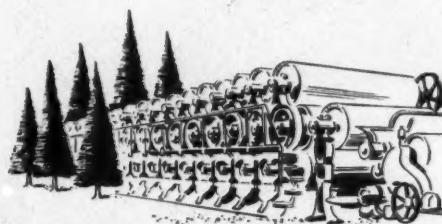
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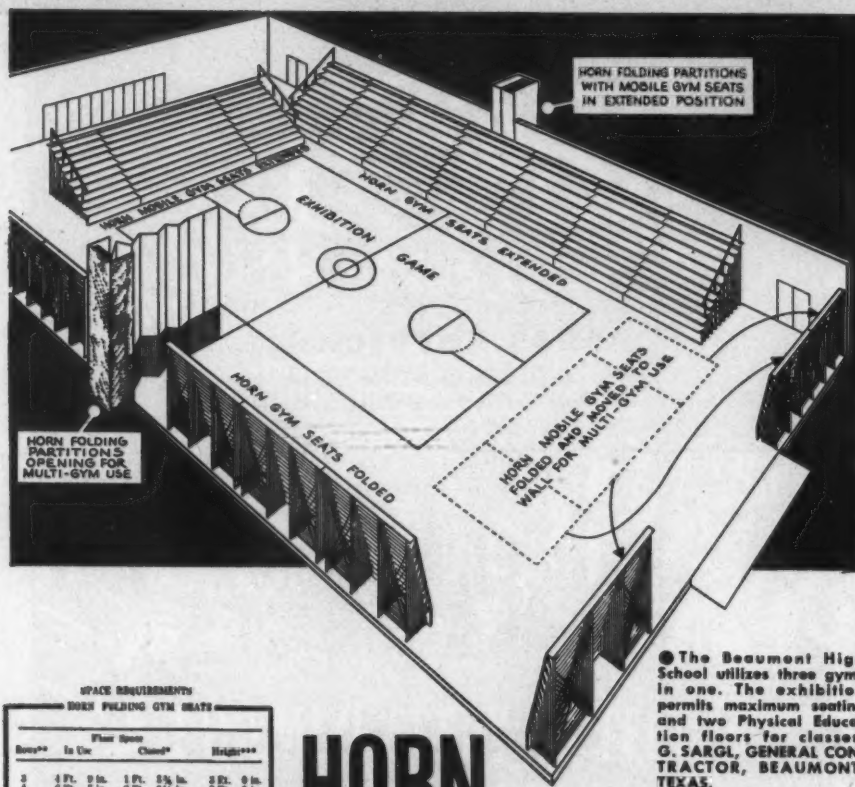
(Continued from page 18)

Dewar, Stevenson & Stanley were architects for the remodeling of Edmonton Gardens, civic arena in Edmonton, Alta. Extension at south end provided space for some 1400 additional seats. New lighting system also was installed

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Row*	Floor Space To Use	Clear*	Height**
3	4 ft. 0 in.	1 ft. 0 in.	8 ft. 0 in.
4	6 ft. 0 in.	3 ft. 0 in.	8 ft. 0 in.
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133	264 ft. 0 in.	261 ft. 0 in.	8 ft. 0 in.
134	266 ft. 0 in.	263 ft. 0 in.	8 ft. 0 in.
135	268 ft. 0 in.	265 ft. 0 in.	8 ft. 0 in.
136	270 ft. 0 in.	267 ft. 0 in.	8 ft. 0 in.
137	272 ft. 0 in.	269 ft. 0 in.	8 ft. 0 in.
138	274 ft. 0 in.	271 ft. 0 in.	8 ft. 0 in.
139	276 ft. 0 in.	273 ft. 0 in.	8 ft. 0 in.
140	278 ft. 0 in.	275 ft. 0 in.	8 ft. 0 in.
141	280 ft. 0 in.	277 ft. 0 in.	8 ft. 0 in.
142	282 ft. 0 in.	279 ft. 0 in.	8 ft. 0 in.
143	284 ft. 0 in.	281 ft. 0 in.	8 ft. 0 in.
144	286 ft. 0 in.	283 ft. 0 in.	8 ft. 0 in.
145	288 ft. 0 in.	285 ft. 0 in.	8 ft. 0 in.
146	290 ft. 0 in.	287 ft. 0 in.	8 ft. 0 in.
147	292 ft. 0 in.	289 ft. 0 in.	8 ft. 0 in.
148	294 ft. 0 in.	291 ft. 0 in.	8 ft. 0 in.
149	296 ft. 0 in.	293 ft. 0 in.	8 ft. 0 in.
150	298 ft. 0 in.	295 ft. 0 in.	8 ft. 0 in.
151	300 ft. 0 in.	297 ft. 0 in.	8 ft. 0 in.
152	302 ft. 0 in.	299 ft. 0 in.	8 ft. 0 in.
153	304 ft. 0 in.	301 ft. 0 in.	8 ft. 0 in.
154	306 ft. 0 in.	303 ft. 0 in.	8 ft. 0 in.
155	308 ft. 0 in.	305 ft. 0 in.	8 ft. 0 in.
156	310 ft. 0 in.	307 ft. 0 in.	8 ft. 0 in.
157	312 ft. 0 in.	309 ft. 0 in.	8 ft. 0 in.
158	314 ft. 0 in.	311 ft. 0 in.	8 ft. 0 in.
159	316 ft. 0 in.	313 ft. 0 in.	8 ft. 0 in.
160	318 ft. 0 in.	315 ft. 0 in.	8 ft. 0 in.
161	320 ft. 0 in.	317 ft. 0 in.	8 ft. 0 in.
162	322 ft. 0 in.	319 ft. 0 in.	8 ft. 0 in.
163	324 ft. 0 in.	321 ft. 0 in.	8 ft. 0 in.
164	326 ft. 0 in.	323 ft. 0 in.	8 ft. 0 in.
165	328 ft. 0 in.	325 ft. 0 in.	8 ft. 0 in.
166	330 ft. 0 in.	327 ft. 0 in.	8 ft. 0 in.
167	332 ft. 0 in.	329 ft. 0 in.	8 ft. 0 in.
168	334 ft. 0 in.	331 ft. 0 in.	8 ft. 0 in.
169	336 ft. 0 in.	333 ft. 0 in.	8 ft. 0 in.
170	338 ft. 0 in.	335 ft. 0 in.	8 ft. 0 in.
171	340 ft. 0 in.	337 ft. 0 in.	8 ft. 0 in.
172	342 ft. 0 in.	339 ft. 0 in.	8 ft. 0 in.
173	344 ft. 0 in.	341 ft. 0 in.	8 ft. 0 in.
174	346 ft. 0 in.	343 ft. 0 in.	8 ft. 0 in.
175	348 ft. 0 in.	345 ft. 0 in.	8 ft. 0 in.
176	350 ft. 0 in.	347 ft. 0 in.	8 ft. 0 in.
177	352 ft. 0 in.	349 ft. 0 in.	8 ft. 0 in.
178	354 ft. 0 in.	351 ft. 0 in.	8 ft. 0 in.
179	356 ft. 0 in.	353 ft. 0 in.	8 ft. 0 in.
180	358 ft. 0 in.	355 ft. 0 in.	8 ft. 0 in.
181	360 ft. 0 in.	357 ft. 0 in.	8 ft. 0 in.
182	362 ft. 0 in.	359 ft. 0 in.	8 ft. 0 in.
183	364 ft. 0 in.	361 ft. 0 in.	8 ft. 0 in.
184	366 ft. 0 in.	363 ft. 0 in.	8 ft. 0 in.
185	368 ft. 0 in.	365 ft. 0 in.	8 ft. 0 in.
186	370 ft. 0 in.	367 ft. 0 in.	8 ft. 0 in.
187	372 ft. 0 in.	369 ft. 0 in.	8 ft. 0 in.
188	374 ft. 0 in.	371 ft. 0 in.	8 ft. 0 in.
189	376 ft. 0 in.	373 ft. 0 in.	8 ft. 0 in.
190	378 ft. 0 in.	375 ft. 0 in.	8 ft. 0 in.
191	380 ft. 0 in.	377 ft. 0 in.	8 ft. 0 in.
192	382 ft. 0 in.	379 ft. 0 in.	8 ft. 0 in.
193	384 ft. 0 in.	381 ft. 0 in.	8 ft. 0 in.
194	386 ft. 0 in.	383 ft. 0 in.	8 ft. 0 in.
195	388 ft. 0 in.	385 ft. 0 in.	8 ft. 0 in.
196	390 ft. 0 in.	387 ft. 0 in.	8 ft. 0 in.
197	392 ft. 0 in.	389 ft. 0 in.	8 ft. 0 in.
198	394 ft. 0 in.	391 ft. 0 in.	8 ft. 0 in.
199	396 ft. 0 in.	393 ft. 0 in.	8 ft. 0 in.
200	398 ft. 0 in.	395 ft. 0 in.	8 ft. 0 in.
201	400 ft. 0 in.	397 ft. 0 in.	8 ft. 0 in.
202	402 ft. 0 in.	399 ft. 0 in.	8 ft. 0 in.
203	404 ft. 0 in.	401 ft. 0 in.	8 ft. 0 in.
204	406 ft. 0 in.	403 ft. 0 in.	8 ft. 0 in.
205	408 ft. 0 in.	405 ft. 0 in.	8 ft. 0 in.
206	410 ft. 0 in.	407 ft. 0 in.	8 ft. 0 in.
207	412 ft. 0 in.	409 ft. 0 in.	8 ft. 0 in.
208	414 ft. 0 in.	411 ft. 0 in.	8 ft. 0 in.
209	416 ft. 0 in.	413 ft. 0 in.	8 ft. 0 in.
210	418 ft. 0 in.	415 ft. 0 in.	8 ft. 0 in.
211	420 ft. 0 in.	417 ft. 0 in.	8 ft. 0 in.
212	422 ft. 0 in.	419 ft. 0 in.	8 ft. 0 in.
213	424 ft. 0 in.	421 ft. 0 in.	8 ft. 0 in.
214	426 ft. 0 in.	423 ft. 0 in.	8 ft. 0 in.
215	428 ft. 0 in.	425 ft. 0 in.	8 ft. 0 in.
216	430 ft. 0 in.	427 ft. 0 in.	8 ft. 0 in.
217	432 ft. 0 in.	429 ft. 0 in.	8 ft. 0 in.
218	434 ft. 0 in.	431 ft. 0 in.	8 ft. 0 in.
219	436 ft. 0 in.	433 ft. 0 in.	8 ft. 0 in.
220	438 ft. 0 in.	435 ft. 0 in.	8 ft. 0 in.
221	440 ft. 0 in.	437 ft. 0 in.	8 ft. 0 in.
222	442 ft. 0 in.	439 ft. 0 in.	8 ft. 0 in.
223	444 ft. 0 in.	441 ft. 0 in.	8 ft. 0 in.
224	446 ft. 0 in.	443 ft. 0 in.	8 ft. 0 in.
225	448 ft. 0 in.	445 ft. 0 in.	8 ft. 0 in.
226	450 ft. 0 in.	447 ft. 0 in.	8 ft. 0 in.
227	452 ft. 0 in.	449 ft. 0 in.	8 ft. 0 in.
228	454 ft. 0 in.	451 ft. 0 in.	8 ft. 0 in.
229	456 ft. 0 in.	453 ft. 0 in.	8 ft. 0 in.
230	458 ft. 0 in.	455 ft. 0 in.	8 ft. 0 in.
231	460 ft. 0 in.	457 ft. 0 in.	8 ft. 0 in.
232	462 ft. 0 in.	459 ft. 0 in.	8 ft. 0 in.
233	464 ft. 0 in.	461 ft. 0 in.	8 ft. 0 in.
234	466 ft. 0 in.	463 ft. 0 in.	8 ft. 0 in.
235	468 ft. 0 in.	465 ft. 0 in.	8 ft. 0 in.
236	470 ft. 0 in.	467 ft. 0 in.	8 ft. 0 in.
237	472 ft. 0 in.	469 ft. 0 in.	8 ft. 0 in.
238	474 ft. 0 in.	471 ft. 0 in.	8 ft. 0 in.
239	476 ft. 0 in.	473 ft. 0 in.	8 ft. 0 in.
240	478 ft. 0 in.	475 ft. 0 in.	8 ft. 0 in.
241	480 ft. 0 in.	477 ft. 0 in.	8 ft. 0

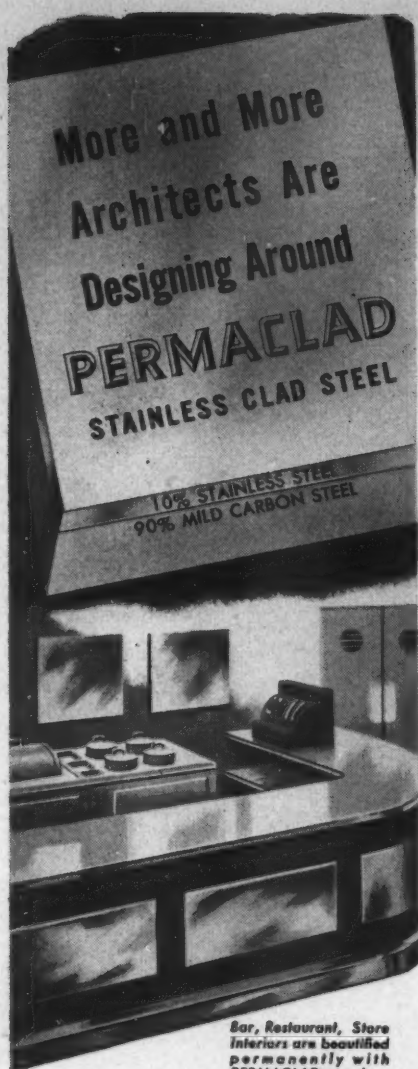


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THE RECORD REPORTS

CANADA

(Continued from page 270)

slump in August, dropping 27 per cent. This figure is considerably less than the 41 per cent drop noted in July; but the percentage is, of course, on a smaller volume. In addition, since the residential building material index moved up by 16 per cent in the year ending June 30, and since other costs are up proportionately, the drop in volume is greater than that shown by the difference in the value figures. For the first time in many months no single residential project valued at more than a million dollars was initiated.

Public and institutional building, combined in one category with commercial construction, carried the group to a better than \$5 million increase over last year. Figure for August included over \$20 million in direct defense contracts.

With very few large jobs in the industrial category, this type of building registered only a small gain in August. Largest jobs were a rolling mill expansion in Selkirk, Man., and a chemical plant in New Toronto, Ont., each valued at \$1 million; a plywood plant at Victoria, B. C., at \$2 million; and a petrochemical plant in Montreal, valued at \$4 million.

Striking increases continued to be made in engineering construction during the month of August. Solid basis was found in three large jobs — a \$30 million power plant and dam in British Columbia, another refinery, valued at \$10 million, at Sarnia; and a Canadian National Railways line in Manitoba now getting under way and expected to cost \$14.5 million.

The totals for the eight-month period showed industrial building a whacking 245 per cent over the same period last year; engineering 322 per cent ahead; commercial and institutional 43 per cent ahead; and residential 15 per cent under.

Builders Attack Credit Curbs As House Starts Show Decline

The decline in the number of dwellings started in the first six months of the year — placed at nine per cent — has aroused the National House Builders Association. There were 38,465 starts in six months of 1951 compared with 42,149 for the same period last year.

(Continued on page 274)

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Many different ceiling treatments are possible. Joists can be left exposed—either plain or decorated. Or, flat ceilings can be produced with metal lath and plaster, or with suspended acoustical materials. Space between the joists houses pipes and conduit, and serves as insulation. For complete information, write for free booklet—"Reinforced Concrete—A Manual of Standard Practice."

1. SAVES CONCRETE

—by eliminating much of the concrete below the neutral axis, which contributes little to floor strength.

2. LIGHTER FRAMING

—because dead floor weight is reduced, making it possible to use lighter framing and foundations.

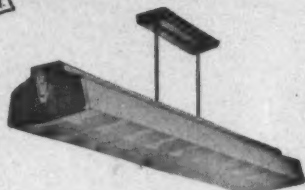
3. SAVES TIME

—by use of ready-made forms of standard dimensions, which can be placed and removed more quickly.

4. CUTS COSTS

—by saving on concrete and lumber, framing, labor, and construction time.

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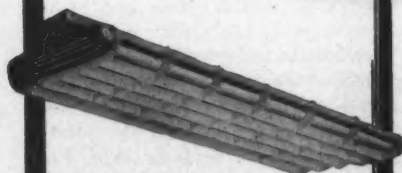


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THE RECORD REPORTS

CANADA

(Continued from page 272)

Angus Gordon, the N.H.B.A.'s new executive secretary, warned that many home builders might leave the housing field "unless credit restrictions are eased, thus giving reasonable assurance to builders that they won't be put out of business."

If this happens, said Mr. Gordon, "their skills and experience may thus be lost when the time comes, as it must, to make up for the present official neglect of the importance of housing."

"Government planners should look ahead," Mr. Gordon asserted. "By next spring our war plants will have pulled thousands of persons now employed in primary industries to our cities. The working force will also be swollen by the arrival of additional thousands of immigrants. Despite its words to the contrary, there is evidence that housing is the last of government's worries. Unless more vision is shown, we're bound to have a shambles of trailer camps, shacks and piano crate villages around our war plants, with all the social, health and schooling problems such developments bring."

"We have a Department of Defense Production, but no department to look after the housing of defense workers. Surely the folly of planning up to the factory fence must be apparent to everyone. We have to have more housing, and home builders are prepared to play a full part in providing it. However, they cannot operate in the strait-jacket now imposed by mortgage credit restrictions."

Layoffs Threaten

Meanwhile, many home builders are enjoying a grim chuckle over a letter they've received from the federal department of labor, asking them to find jobs for unemployed auto workers.

"Right now," comments Rex Heslop of Etobicoke, one of the country's largest builders, "we're letting men go ourselves. The government's credit restrictions have hit housing just as hard as the automobile industry. Our own and subcontractors' crews are down from 400 to 20 men. Present down payment requirements are so harsh that families with modest incomes can't save enough to buy homes of their own. If we aren't

(Continued on page 276)



Cure for a Dirty Shakedown

Twice each day it was necessary for a large Eastern steel producer* to shakedown his furnaces. This caused high concentrations of dirt which resulted in severe air filter maintenance and inefficient air conditioning.

FARR Company, when called upon for a permanent solution, recommended a FAR-AIR** Self-Washing Filter. This proposal was followed and an installation made. After two years of use, the results are very satisfactory and another FAR-AIR unit has been installed in the same plant.

The unit was set to automatically wash and re-oil itself just prior to the time that the furnaces were shaken down. Thus, maintenance was virtually eliminated and the filters were always at peak efficiency.

FAR-AIR Self-Washing Filters can be furnished to handle any CFM requirement. If you have a special air filtration problem, Farr engineers will help you find the proper solution. Write for complete information to Farr Company, P.O. Box 10187 Airport Station, Los Angeles 45, Calif.



*Name furnished
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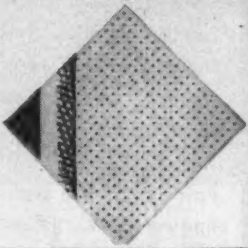
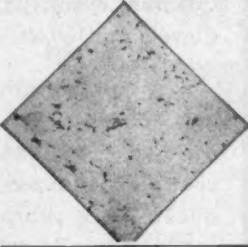
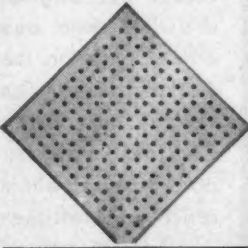
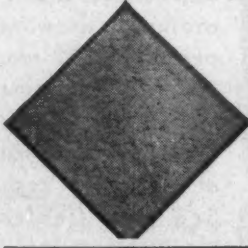
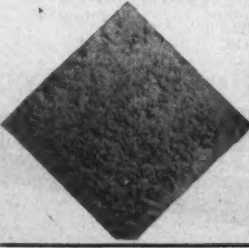
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		Noise Reduction Coeff.	Thickness	Sizes	Finish
	ACOUSTIMETAL Low maintenance cost. Can be washed or painted any number of times. Panels quickly removed for access to plumbing and wiring. Fireproof, permanent, salvageable.	.85	1 1/4"	12" x 24"	Alkyd resin enamel finish. Baked on by infra-red light. Bonding of metal assures greater adhesion of paint.
	TRAVACOUSTIC Fireproof mineral tile. Closely resembles beautiful travertine stone. Fissures vary in size, depth, and arrangement. Permanent, sanitary, acoustically efficient.	.65 .70	1 1/16" 1 3/16"	6" x 6" 6" x 12" 12" x 12" 12" x 24"	Non-glaring white finish applied at the factory gives high light-reflection. Repaintable with brush or spray gun.
	ACOUSTIFIBRE Perforated wood fibre tile. Round, clean holes drilled deep into porous core. Chemically-treated against mould and fungus. Sanitary, cleanable, repaintable.	.50 .65 .70	1/2" 5/8" 3/4"	12" x 12" 12" x 24"	Factory-applied shell-white finish on face and bevels results in high light-reflection.
	ECONACOUSTIC Low cost wood fibre tile. Distinctive brushed texture surface offers unusual natural beauty. Cleanable with vacuum cleaner.	.60	1/2"	12" x 12" 12" x 24"	Prepainted white. May be spray-painted when other colors are desired.
	THERMACOUSTIC A mineral wool product which is sprayed to various thicknesses. Fireproof and rotproof. Especially adaptable to irregular surfaces.	.80 at 1/2" thickness	As desired	Monolithic	Fissured texture can be repainted to harmonize with the decorative scheme without destroying its acoustical properties.



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THE RECORD REPORTS

CANADA

(Continued from page 274)

permitted to build and sell houses for sensible down payments, we've no alternative but to cut production."

Campbell Holmes, North York builder and past president of the Toronto Metropolitan Home Builders' Association, echoes Mr. Heslop's remarks. "If we have to disband our crews," he says, "the home building industry will disintegrate. Our workers' skills are highly specialized. They're not like factory employees who can be used in any one of a variety of manufacturing processes. Once building tradesmen get settled in other types of work, it is difficult if not impossible to get them back."

House Prices Continue Rise

While federal deflationary measures have reduced the number of new house starts, the law of supply and demand seemed to be pushing the price of existing dwellings higher.

W. H. Bosley & Co., realtors, report that Toronto house prices have reached a new peak. Their office index registers 313, 34 points or 12 per cent above the level at the first of the year. The index is based on the average price per residential property sold as compared with the average assessment figures for 1946. Trend for the last three months recorded has been upward:

Month ending	Average price	Bosley Index
Aug. 11	\$11,334	313
July 14	11,072	307
June 16	10,798	305

Total sales for the month ending August 11 amounted to \$5,995,654, compared with \$6,544,905 for the month ending July 14. Total assessments for these properties was \$1,911,786, as against \$2,121,721. There were 529 properties sold compared with 555 in the preceding period.

Builders' Head Sees Ruin If Curbs Are Not Relaxed

Hundreds of builders face disaster unless mortgage credit restrictions are eased, F. A. Mager, president of the Na-

(Continued on page 278)



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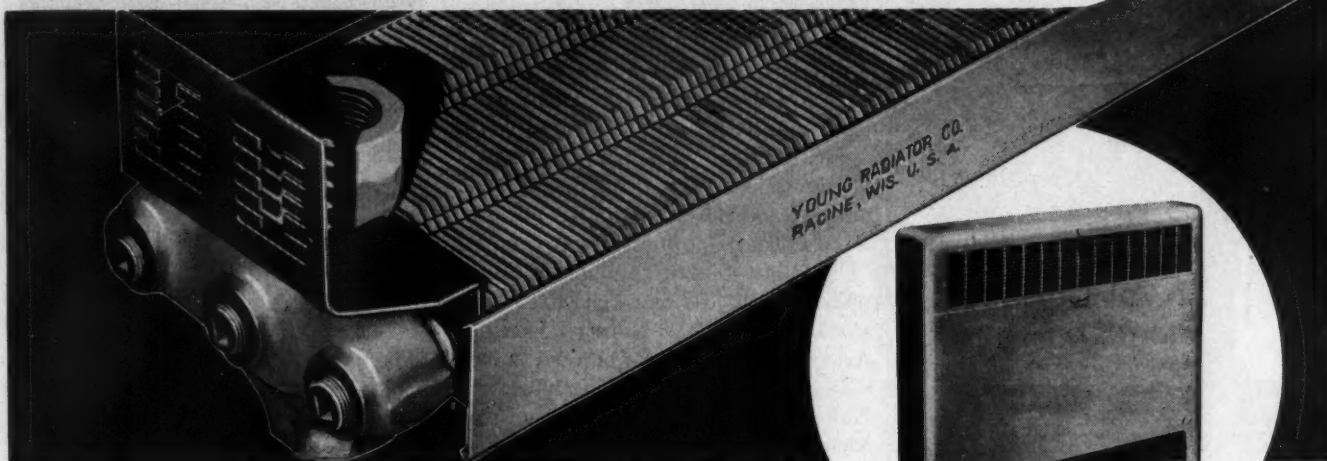
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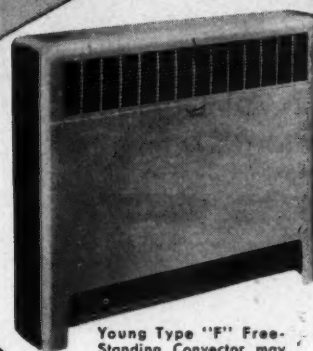
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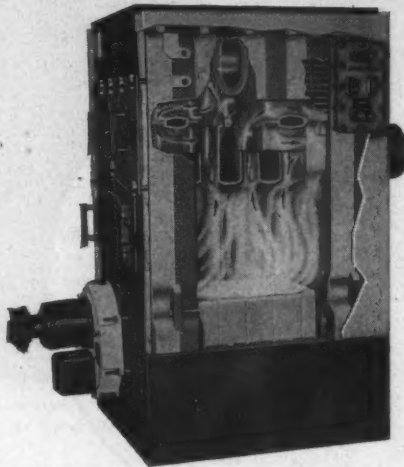
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THE RECORD REPORTS

CANADA

(Continued from page 276)

tional House Builders Association, declares.

"Figures released by the Dominion Bureau of Statistics show 40 per cent fewer dwellings were started in July than in the same month a year ago. The drop can be blamed on Ottawa's failure to regard housing as part of the national defense effort."

Mr. Mager went on to say that builders are eager to supply the houses that are so desperately needed. The obstacle is the size of the down payment required. "Until last February," Mr. Mager pointed out, "the extra one-sixth loan available under the National Housing Act made it possible for families to buy a decent home for \$1000 to \$1500 down. Now the government makes them pay \$3000 to \$4000. How can young married couples with children save that kind of money? The answer is they can't. At present, only the well-to-do can afford new houses."

Mortgage credit restrictions do nothing, in Mr. Mager's opinion, to stop the inflationary trend in housing. He claims the cost of new dwellings is rising because wage rates and materials prices are established outside the housebuilding industry. "They're set by the vast volume of non-residential construction, which includes defense construction and amounts to three or four times the dollar value of house building," he declared. "At the same time, because of the limited number of new houses, demand is forcing the price of older dwellings upwards."

"Bad as the situation is now," he concludes, "it will defy description next spring. Already the birth rate, immigration and the influx of defense workers are jamming our great industrial centers. Attics, private garages and basements are full; trailer camps and shantytowns are springing up. Much of this congestion, with its disastrous effects on the health and morals of the younger generation, would be avoided if the government would ease its mortgage credit terms."

Building Wage Up 9½ Per Cent For First Six Months of 1951

Wages in most building trades have soared this year, with an across-the-

(Continued on page 280)



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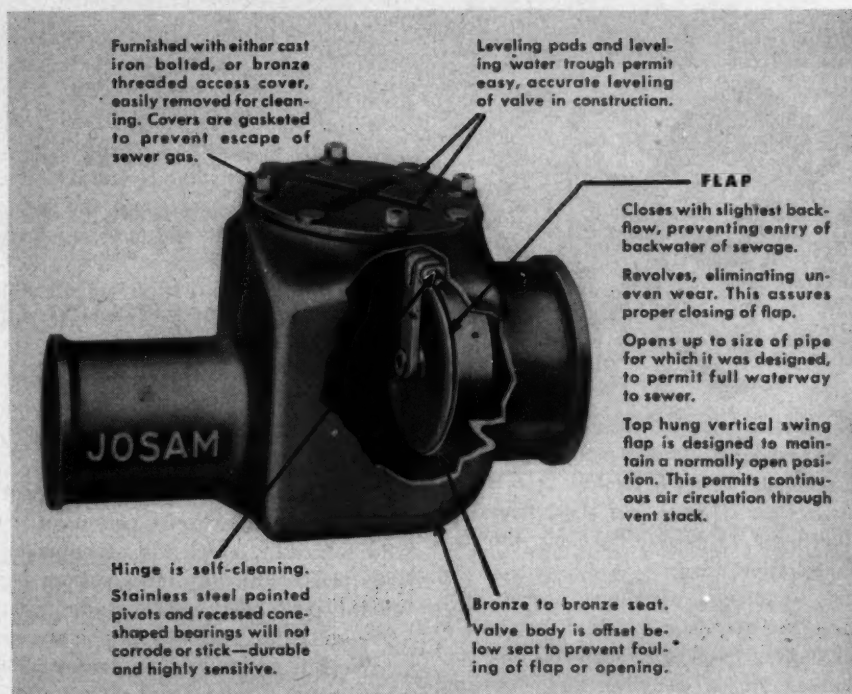
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THE RECORD REPORTS

CANADA

(Continued from page 278)

board increase of nine and a half per cent, according to the semi-annual survey conducted by the Canadian Construction Association and 32 Builders' Exchanges.

Other aspects of the building labor picture revealed by the survey: the number of work stoppages doubled in the first seven months of the year, compared with 1950; inclusion of escalator clauses in new wage agreements has become customary.

Ontario Mental Project Is Biggest Canadian Hospital

The new Ontario mental hospital now under construction at Smith's Falls will be the largest hospital in Canada. Its total of 2400 beds will top the largest veterans' hospital — Sunnybrook — listed by the Canadian Hospital Council as having 1400 beds, and the largest civilian hospital — Vancouver — with 1200 beds.

Cost to complete the Smith's Falls project is estimated at \$14,400,000. The federal government will contribute \$3,276,998 of this sum, the largest single grant made to date under the national health program. The province makes up the balance.

Architect George N. Williams, deputy minister of public works, points out that the first unit, which will accommodate 900 beds, is already in operation, part of its space being used for administrative and other purposes for the present.

Work is under way on a second 900-bed unit and the boiler house, laundry, mechanics' workshop, stores and garage.

Next unit to be built will be a treatment and surgical center with 600-bed capacity. Facilities will eventually include an administration building and a hospital school to increase Ontario facilities for caring for mentally deficient children.

New Bank Opens in Toronto: Biggest Postwar Skyscraper

Canada's largest postwar skyscraper, the 25-story Bank of Nova Scotia building in the heart of Toronto's financial district, was recently opened to the

(Continued on page 282)

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For complete specification information on Fiberglas Insulating Form Board see Sweet's Files—Architectural OR write us today for our A.I.A. File 37-B "Fiberglas Design Data". Owens-Corning Fiberglas Corporation, Dept. 68-K, Toledo 1, Ohio.

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THE RECORD REPORTS

CANADA

(Continued from page 280)

public. Dignitaries of the political and business worlds took part in elaborate ceremonies climaxed by the presentation of the key to the main entrance to Board Chairman H. D. Burns by Architect A. S. Mathers.

Architects were Mathers & Haldenby; associate architects Beck & Eadie. Structural engineering was by Wallace, Carruthers & Associates Ltd.; mechanical engineering by Karel R. Rybka.

The new building is constructed of Indiana limestone and towers 322 ft above the street. Its architecture is described as "modern classic, with vertical lines strongly accentuated." It is designed to sway as much as two in. under extreme wind conditions.

Bank premises occupy the first eight floor, and the remaining 17 floors are rented. Some 2500 people work in the building. The bank's employees have their own lounges and dining rooms, and — for 22 minutes every hour — hear recorded music selected to relieve tension and fatigue.

The main banking room is three stories high and has on its north wall the largest mural sculpture in Canada — a 600-sq-ft bas relief depicting symbolically the various industries aided by the bank's financial operations. Miss Jacobine Jones was the sculptor.

Vaults for cash, coin, securities and safe deposit boxes are located 40 ft below street level and have walls of steel-plated reinforced concrete three ft thick.

(Continued on page 284)



Max Fleet Photo

Another view of entrance, Exclusive Upholstering Co., shown also on page 18



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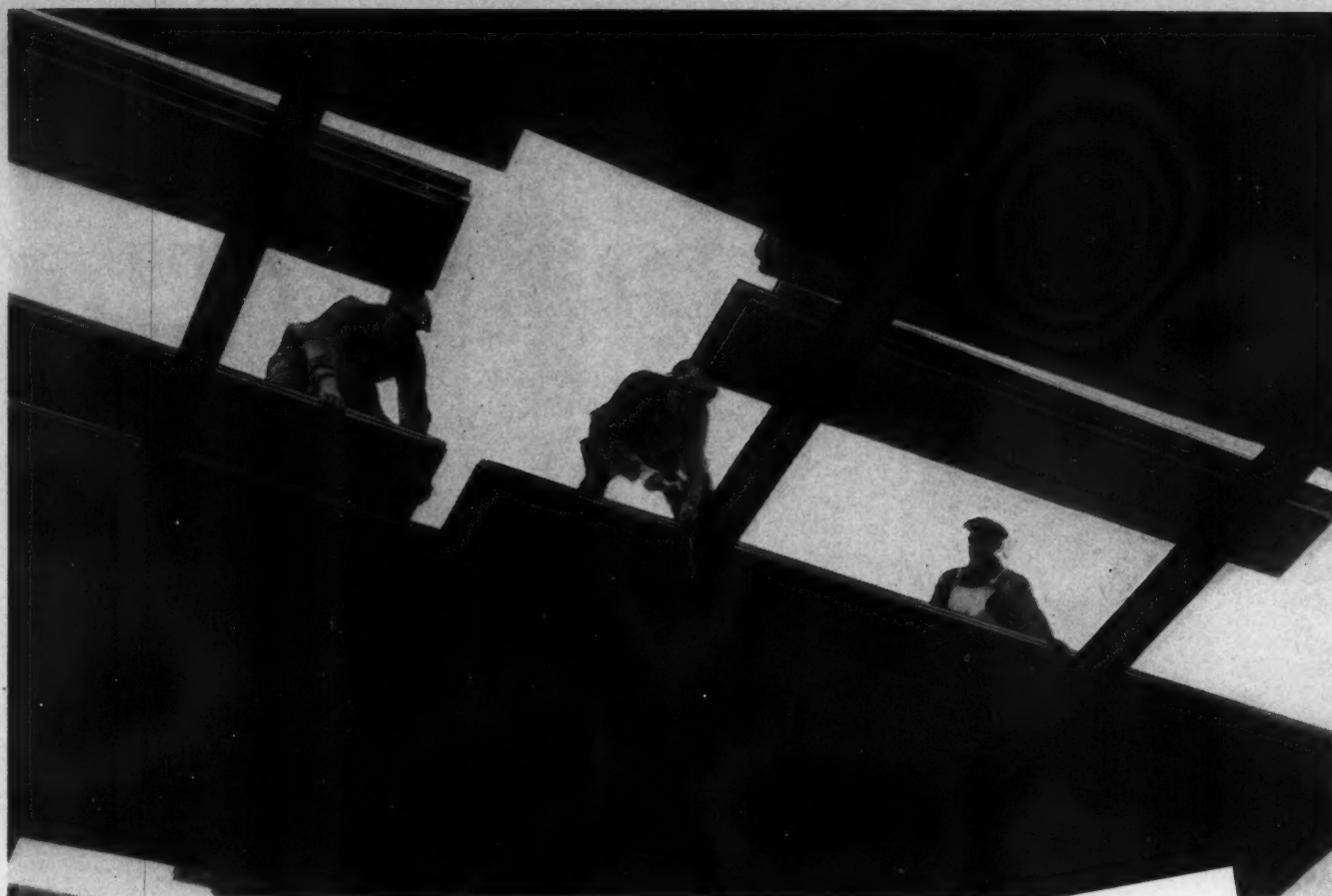
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HIGH INSULATION VALUE	(with 1" insulation)	A+
EASE OF INSTALLATION	(tongued and grooved—handles like lumber)	A+
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THE RECORD REPORTS

CANADA

(Continued from page 282)

Montreal Architect Designs Unit for House Cooperative

Jean Dampousse, Montreal architect, has designed a "stock" house for Les Chantiers St. Joseph, a housing cooperative in Granby, Que.

Since its foundation, the organization has built 50 six-room houses at an average cost of \$4000.

The down payment for a lot and excavation is \$300. Temporary financing is provided by La Caisse Populaire Desjardins of Granby. A lending institution, La Societe des Artisans, gives a mortgage of \$3800 on each house at five per cent interest, of which the member pays two per cent and the remaining three per cent is paid by the Quebec government. Amortization period is 20 years, with the interest rate adjusted every five years. Monthly carrying charges run about \$30, including property taxes.

It takes only nine working days to erect one of these cooperative houses. Mass production methods are employed in fabricating some of the parts, with the rest of the work being divided between subcontractors and members. The subcontractors put in the concrete foundation and look after the plastering, plumbing, heating and wiring. Members contribute their spare time to erect the structural frame, install the insulation, put on the lath, siding and roofing. When the plastering is finished, members who are specialists take over to apply trim, hang doors and lay hardwood floors.

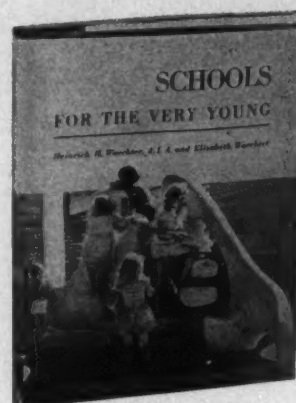
Ontario President Addresses New York State's Architects

Earle L. Sheppard, president of the Ontario Association of Architects, addressed the luncheon meeting at the General Brock Hotel, Niagara Falls, Ont., as the final event of the annual convention of the New York State Association of Architects October 13.

Mr. Sheppard estimated construction contracts in Canada for 1951 would reach a record-breaking total of \$2,250,000,000. "Development of our natural resources is generating the steam behind the biggest building boom in our history," Mr. Sheppard declared.

Schools for the Very Young

by HEINRICH H. WAECHTER, A.I.A.
and ELISABETH WAECHTER



THOUGH many volumes have been written about school design, "Schools for the Very Young," a brand new book just off the press, is — so far as we know — the first in which an architect and a child educator have collaborated to provide an up-to-date treatise on the requirements of the particular type of school demanded for the proper training of the very young child.

Beginning with a brief yet adequate historical and philosophical background, in which the development of the theory and practice of child education is discussed, the book goes on to describe the pre-school in action, noting the events of the school day and the corresponding environmental needs of the children and their teachers. Examples of existing pre-schools are presented with critical comment. Detailed information is given concerning the space apportionments and arrangements called for by the activities peculiar to such institutions. Since one of the authors is especially concerned with city planning, the relation of the pre-school to its neighborhood and community is analyzed, and the many different types of pre-schools that have developed to meet special conditions are enumerated and explained.

The outdoor space and its proper equipment are thoroughly covered from the standpoint of a capable architect who has given much thought to the problem. Technological problems of construction, lighting, ventilation, mechanical equipment, etc., are scrutinized in the light of the most recent practice. A wealth of illustrations add both interest and information, and a selective bibliography will aid further study.

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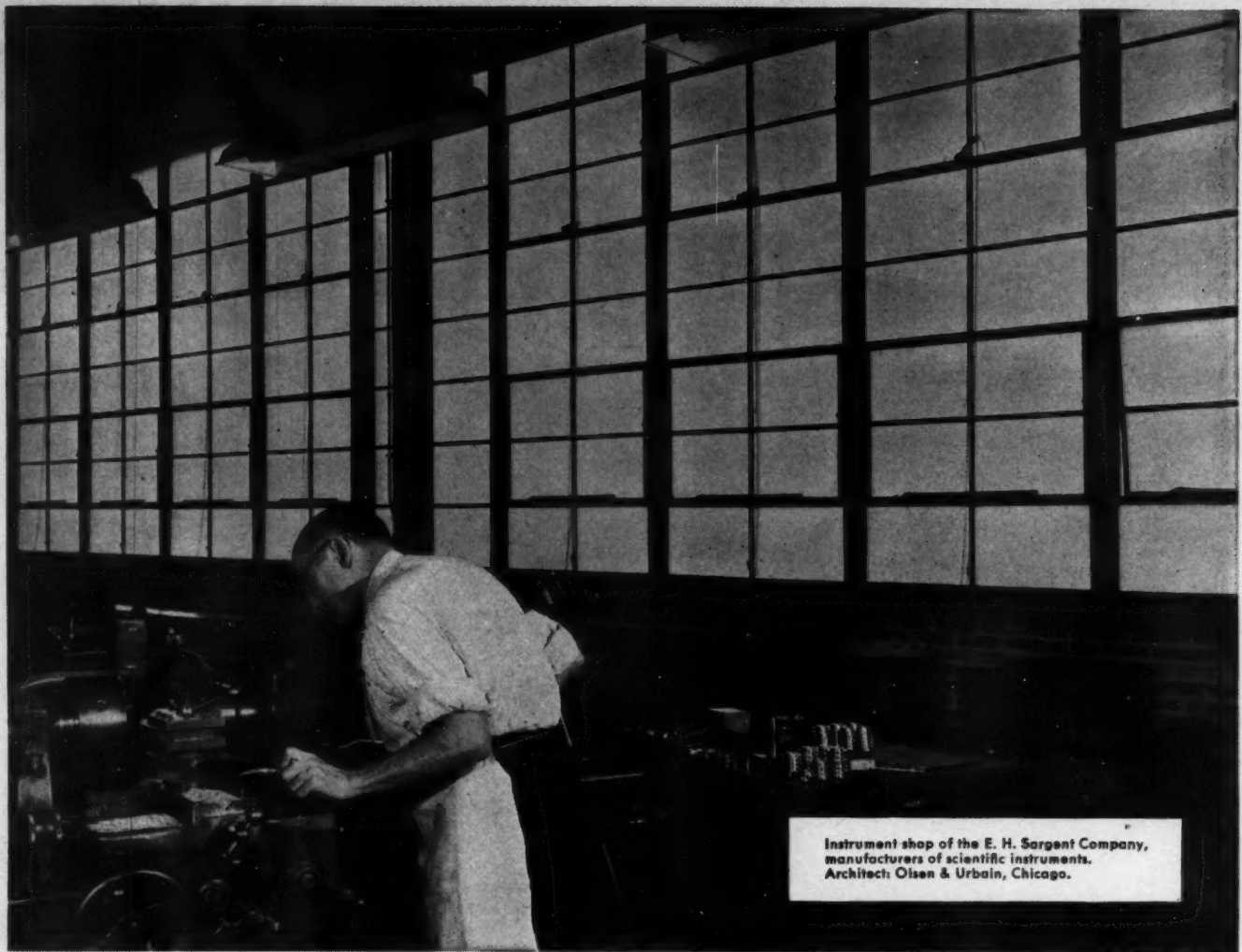
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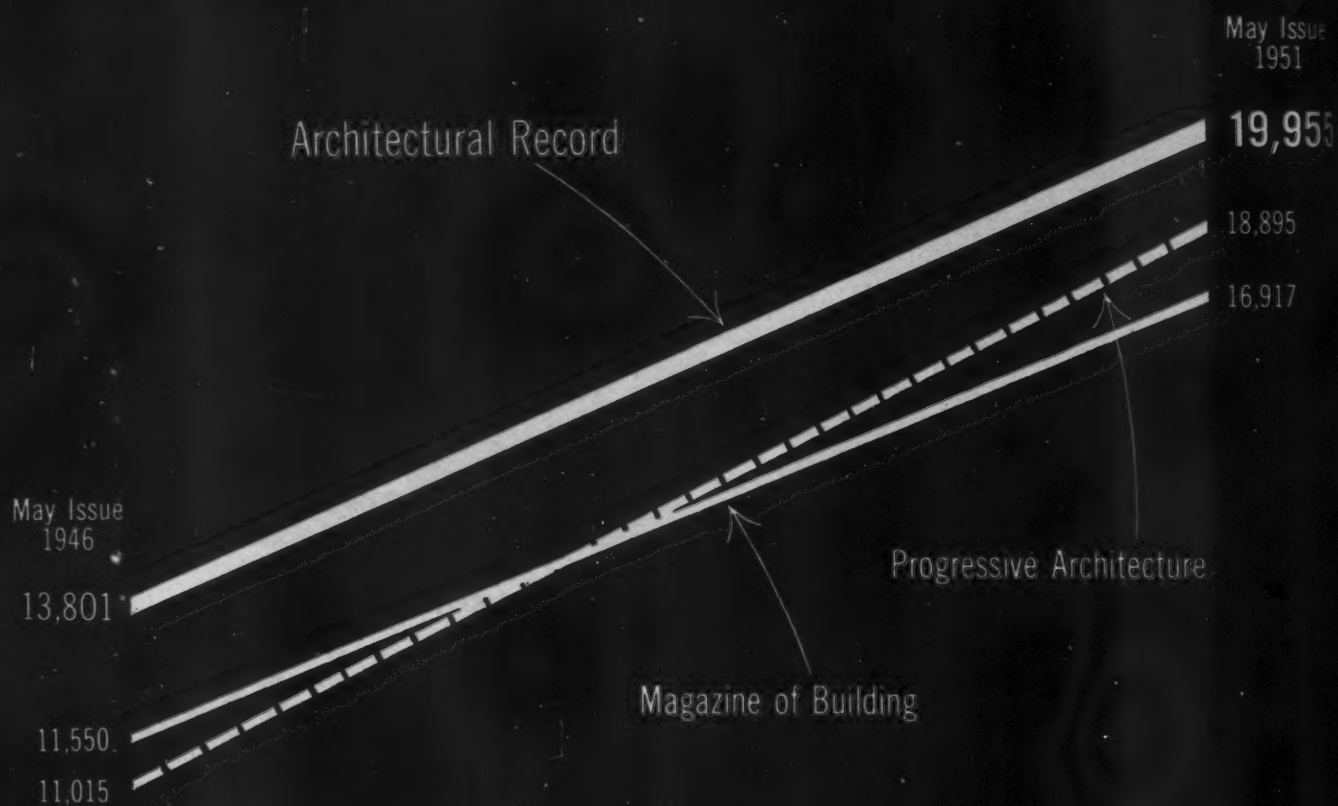
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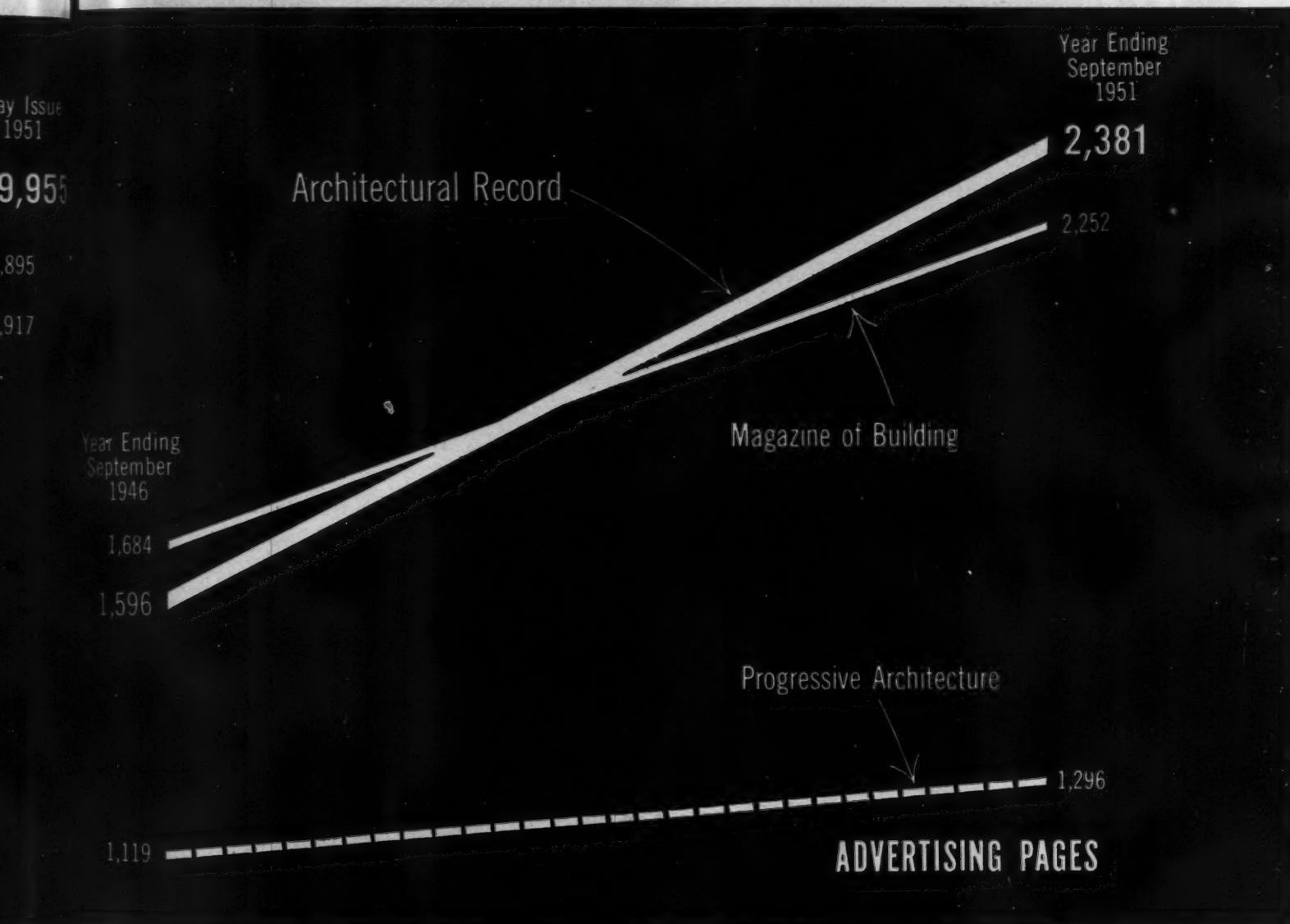
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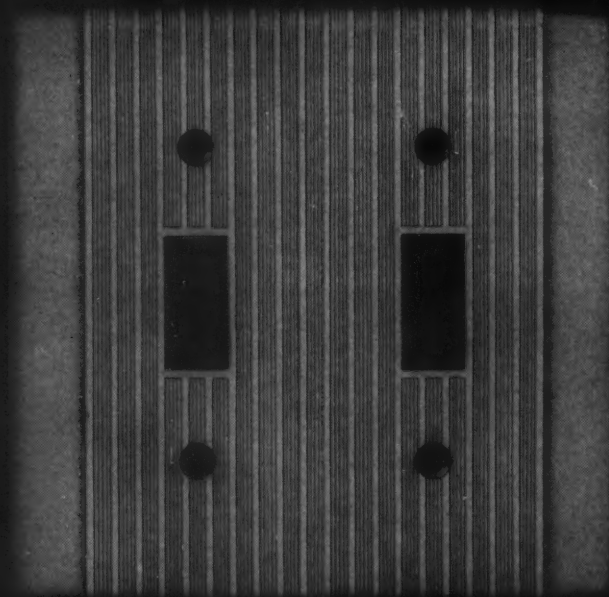


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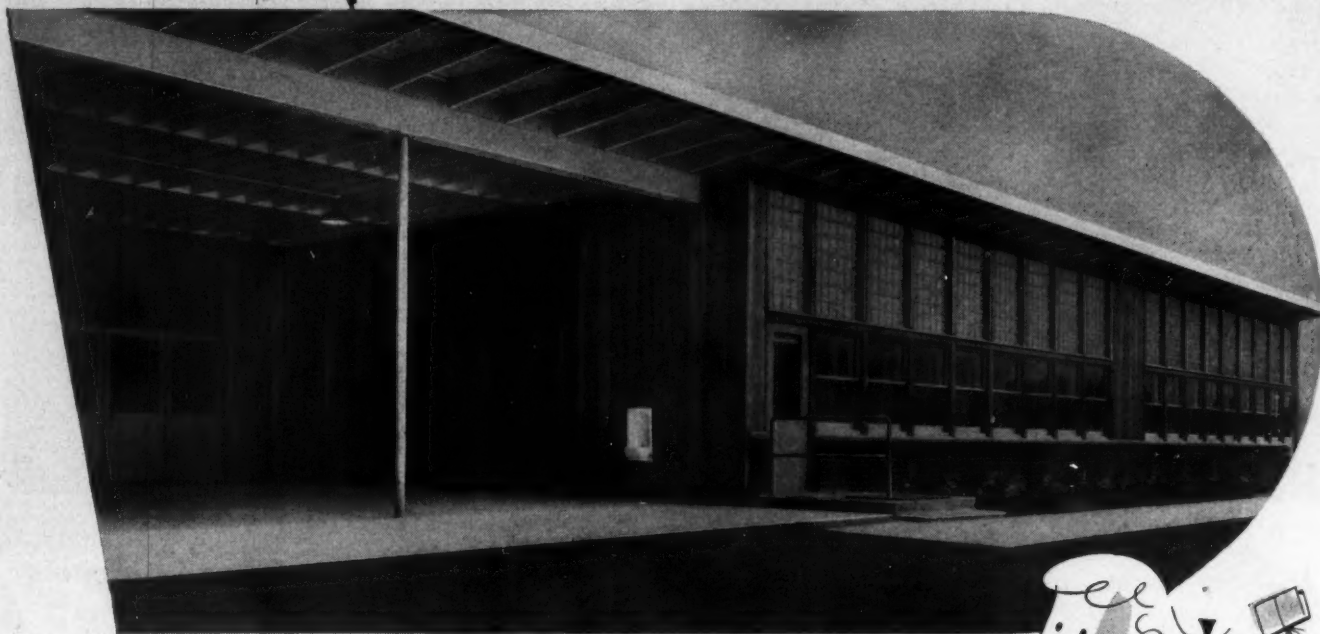
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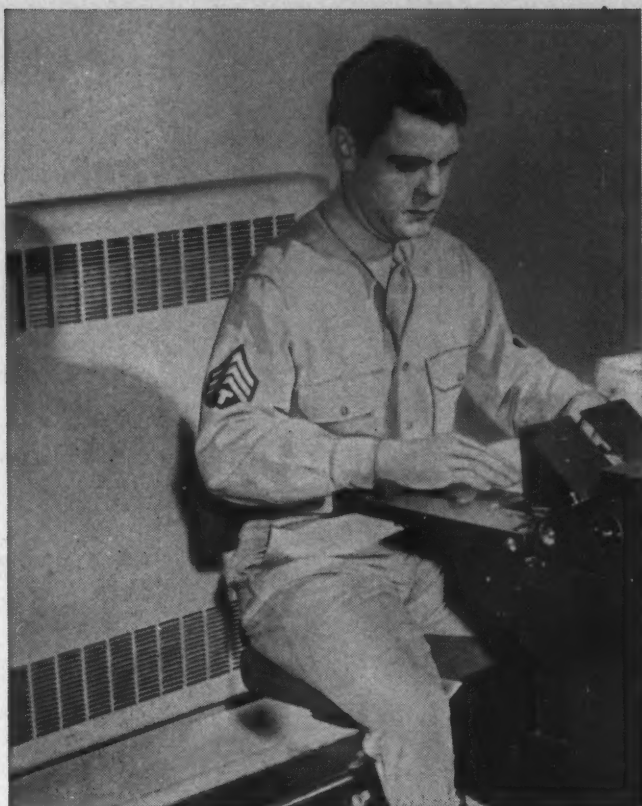
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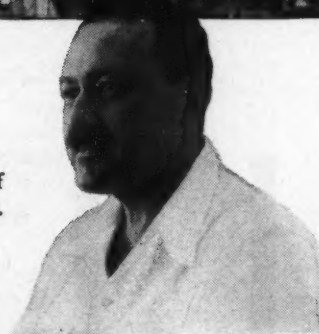
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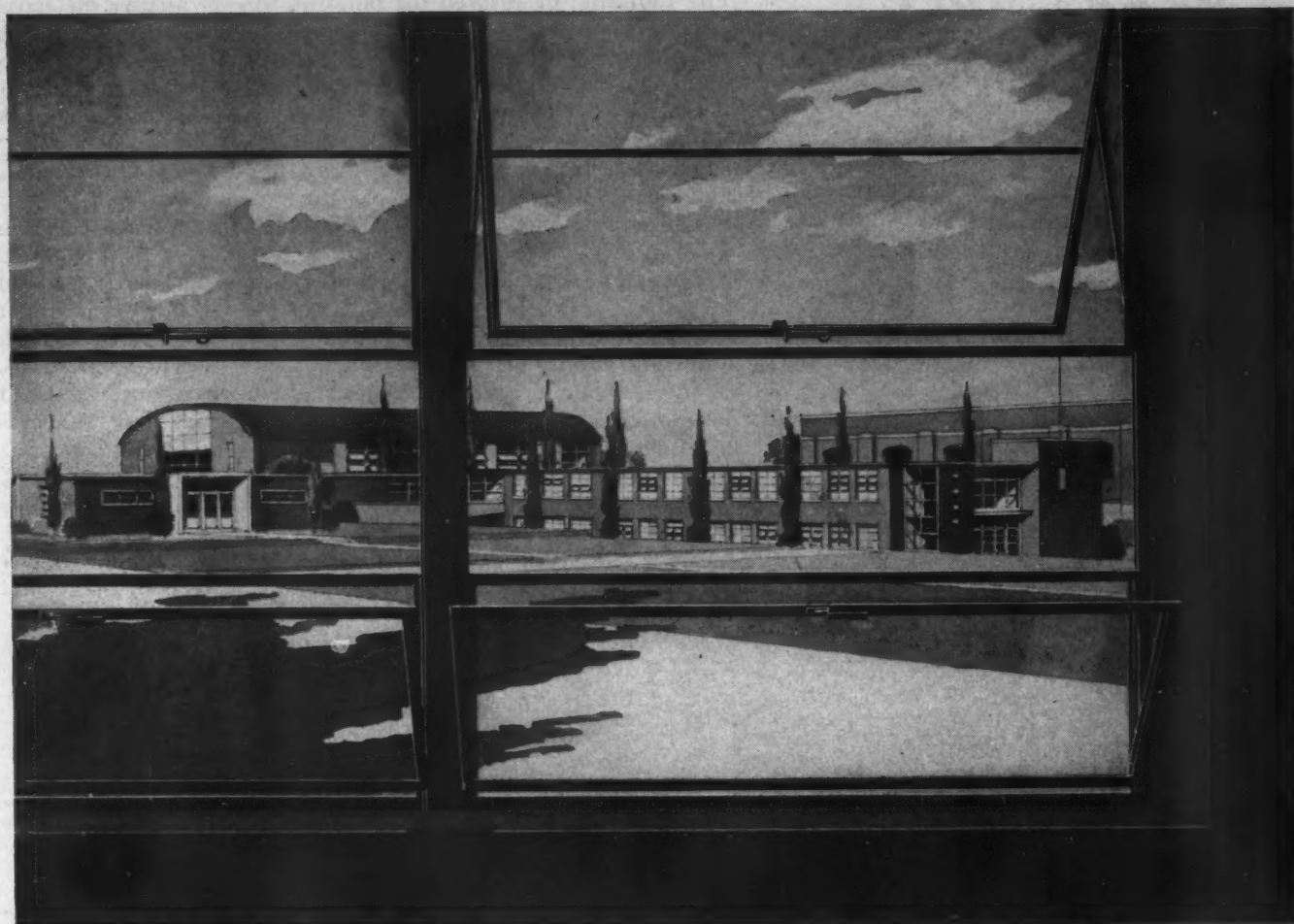
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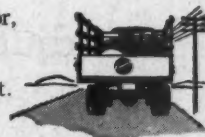
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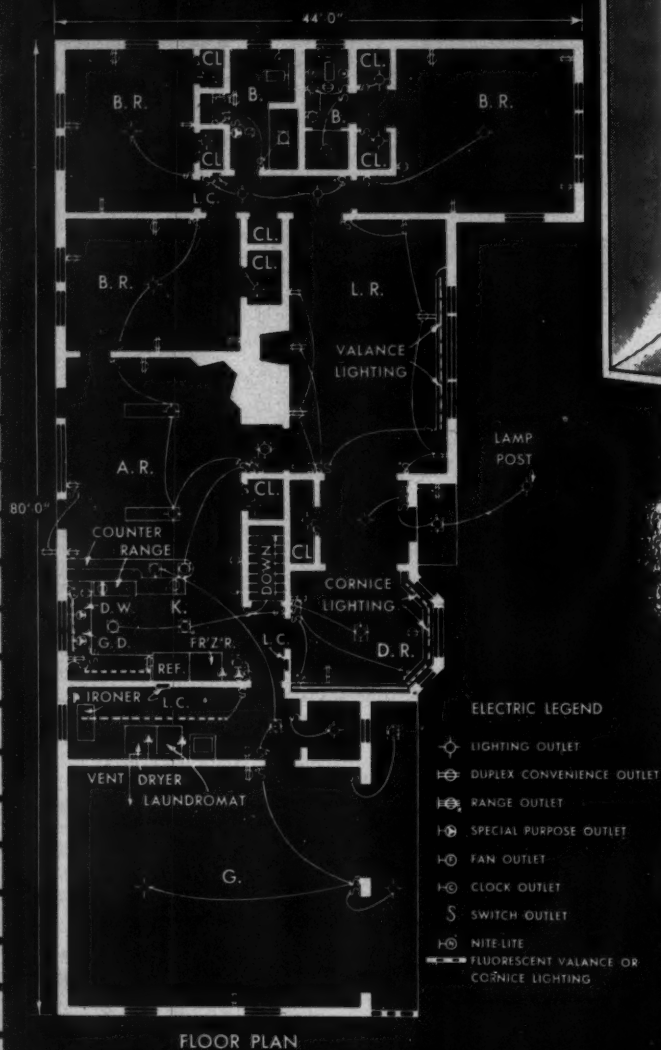


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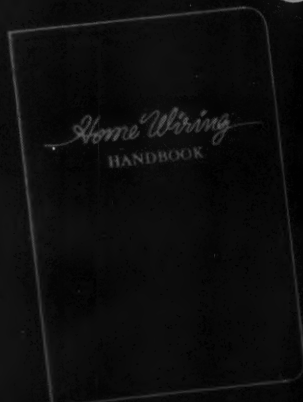
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PLATE 9

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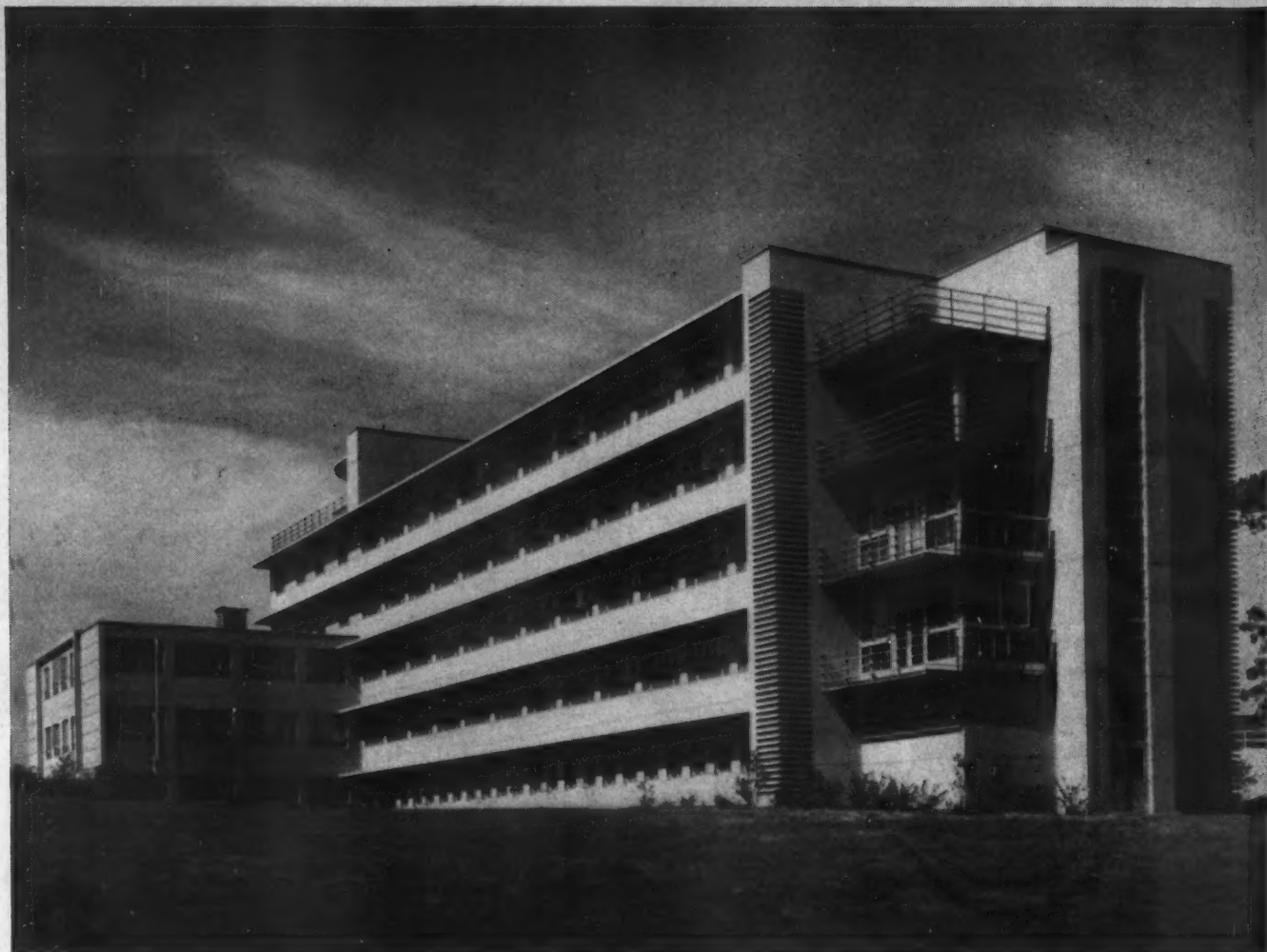
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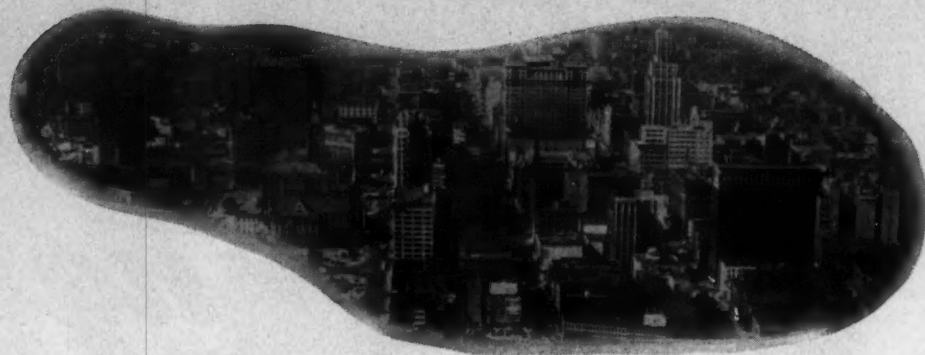
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 The Jackson-Madison County Hospital in western Tennessee was designed in architectural concrete by Architect J. Frazer Smith, Inc., of Memphis. The structural engineer was A. R. Jessup of Nashville. The contractor was Harmon Construction Company of Oklahoma City.

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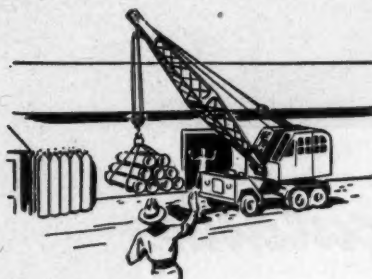
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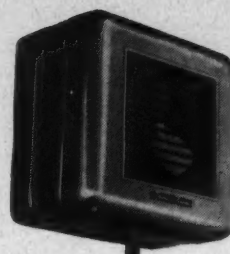
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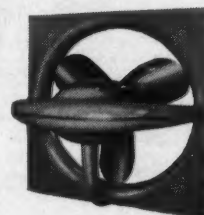
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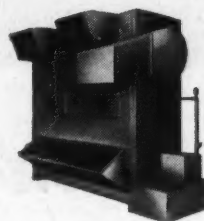
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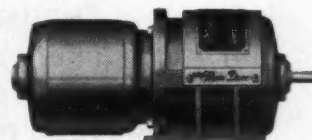
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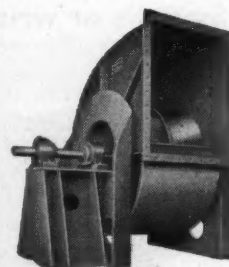
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Diagram illustrating the components and functions of a Thermo-Safe Water Pressure Group:

- THROTOP AIR-PROOF PRESSURE TANK**: A horizontal tank at the top left.
- VERTICAL TYPE FLOW CONTROL VALVE WITH AIR TIGHT**: A vertical valve assembly connected to the Throtop tank.
- THROTOP AIR GAUGE**: A small gauge connected to the top of the Throtop tank.
- NO. 1 THROTOP WATER PRESSURE GROUP VALVE**: A valve assembly connected to the bottom of the Throtop tank.
- THROTOP AUTOMATIC FILLING VALVE**: A valve assembly connected to the side of the Throtop tank.
- NO. 207 EXHAUST VALVE CONTROL**: A control unit connected to the side of the Throtop tank.
- SOLE ATTACHES TO BOTTOM MAIN**: A label indicating the connection point for the main water supply.
- THROTOP WATER PRESSURE GROUP**: The central vertical assembly containing the main pressure control valve and associated piping.
- NO. 207 SOLID TRANSDUCER**: A transducer unit connected to the side of the Throtop Water Pressure Group.
- HORIZONTAL WATER CIRCULATOR—POSITIVE PUMPING CIRCULATION**: A horizontal pump unit at the bottom right.
- NO. 207 HOIST PUMP**: A small pump unit connected to the side of the Throtop Water Pressure Group.
- THROTOP HOIST PUMP—PROVIDES POSITIVE PUMP WATER CIRCULATION AND HOIST**: A label indicating the function of the hoist pump.
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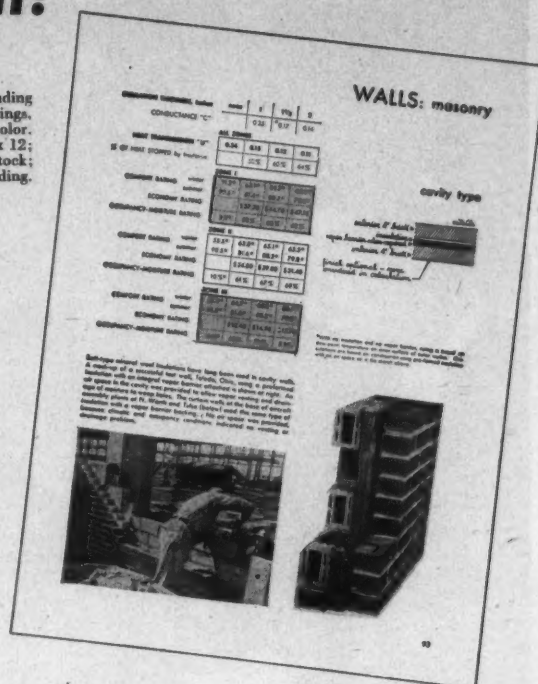
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● In view of this trend, "Design of Insulated Buildings for Various Climates" could not have been published at a more opportune time. For this authoritative study of *insulation*—a vital factor in modern building—explains how money can be saved, and waste avoided, by the proper use of building insulation materials. It covers the *principles* and *practices* that should guide the design of roofs, ceilings, walls and floors in all types of buildings and in all climates of the United States.

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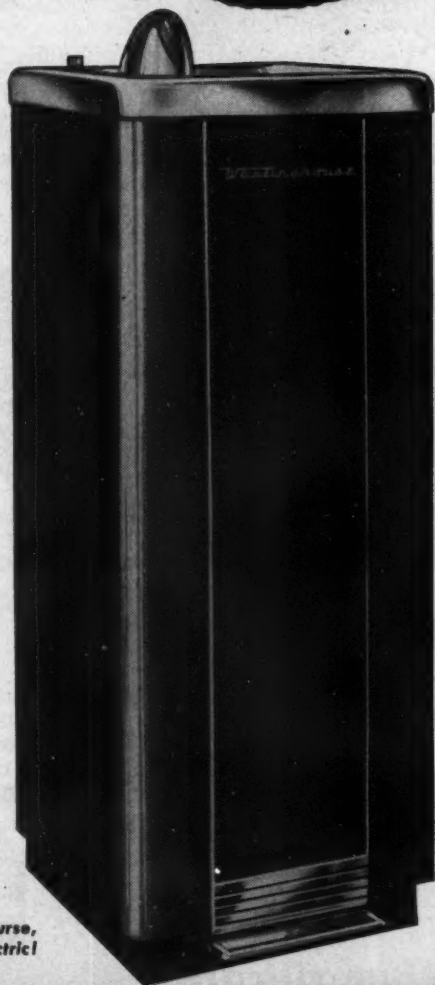
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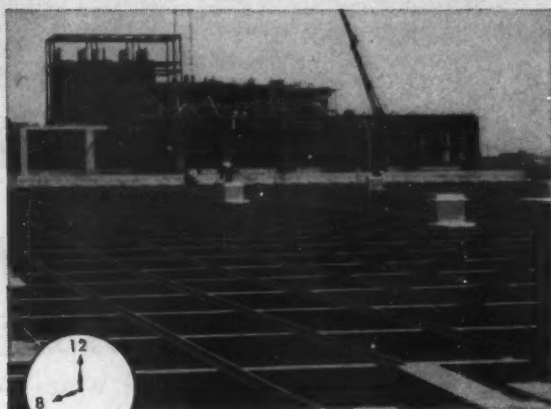


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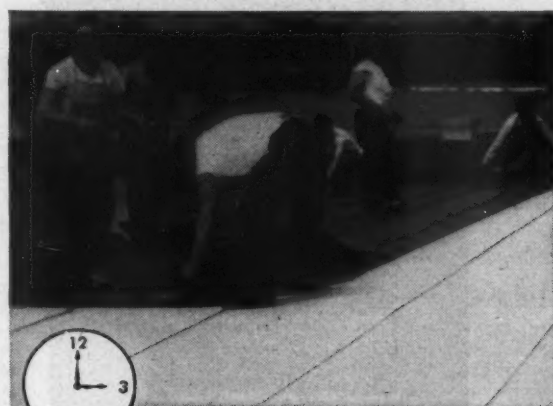
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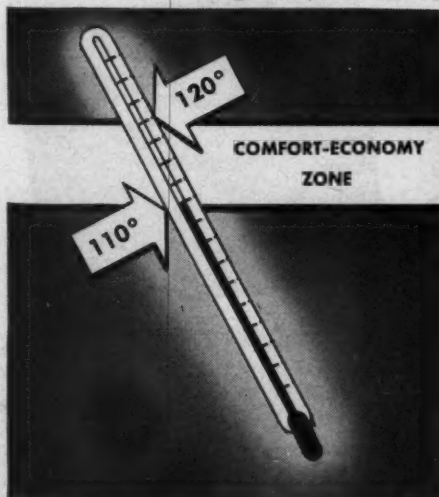
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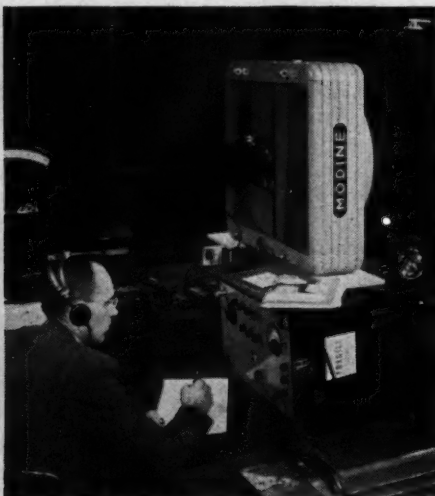


Vertical Delivery model shown here (available from 155 to 2550 EDR). Horizontal and Power-Throw types are also built for hot water and steam, as well as Gas-Fired units.

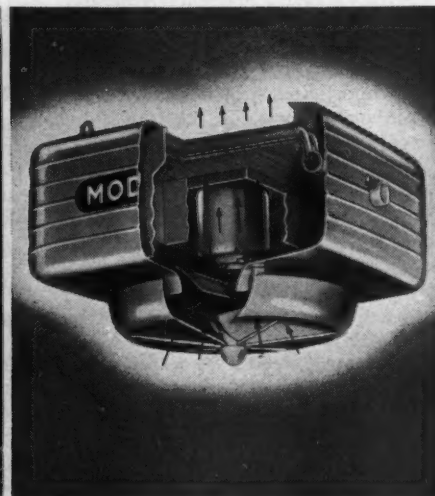
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Thus "School Planning" offers a series of case-histories of school design... gives a cross-section of the best produced in this country in recent years... and provides exhaustive study and examination of new trends in every important phase.

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"School Planning" presents significant examples of grade, intermediate and secondary schools in virtually every State from Maine to California; and discusses both purely technical aspects of design and cultural and academic considerations.

In the case-histories presented, widely differing new techniques are illustrated and explained: multi-purpose rooms and corridors, classroom shapes, structural simplicity and modular design, bilateral and artificial lighting.

Such divergent subjects as the effect of different plan arrangements on structural costs, the trend away from textbook recitation, the relation of stairs to school units, floor area per unit, the "laboratory-type" program of instruction, audio-visual education are analyzed and discussed by experts.

Many Outstanding Contributors

Far from being the work of a single man or even a group of individuals, "School Planning" represents the distilled experience of literally hundreds of architects and school administrators who have specialized in scholastic problems, including such well-known authorities as Ernest J. Kump, Lawrence B. Perkins, Philip Will, John E. Nichols, N. L. Englehardt, Stanton Leggett, Richard Neutra, Alonzo J. Harriman, John Lyon Reid and many others.

For Educators and Architects Alike

This 456-page volume is designed both for architects and school groups alike. It will help school boards, superintendents, principals to know how others have met and are meeting similar problems... provide them with a basic understanding of school architecture so that they may intelligently discuss their problems with architects. It will give architects a quick reference to all important recent advances in school planning and freshen their knowledge of school problems.

What Price Schools?

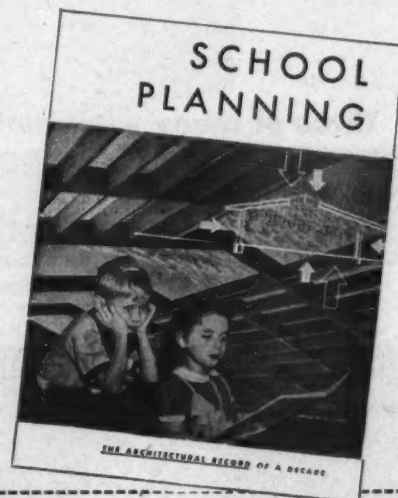
Costs are a dominant consideration in school planning today. In case after case, "School Planning" shows how it is now possible to cut costs of typical schools by design alone, *without skimping on materials, workmanship or facilities*. One section alone, answers such questions as:

- Which is 7% less costly?—One-story school or two-story?
- How do low eaves relate to low cost?
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- What is the relation between square foot cost and span?
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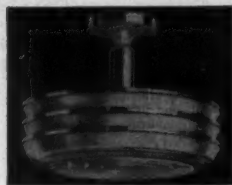
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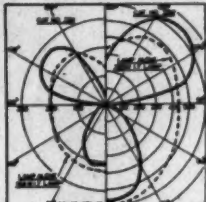
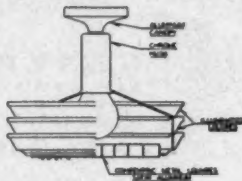
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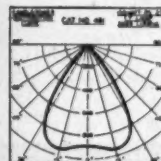
No. 2311 11 1/2" Dia. 11" O.A. 150W
No. 2312 14" Dia. 17" O.A. 200W
FINISH: Silver-White.
Concentric Metal Louvers Ribbed Satin Aluminum.
Made of Aluminum.



Performance and construction details are given for all products.

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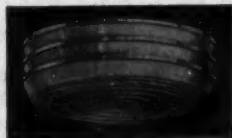
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RECESSED**



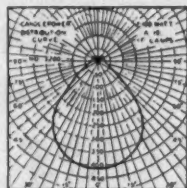
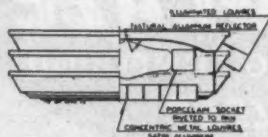
LUMINOUS LOUVRED METAL BANDS

SPECIFICATIONS

The fixture shall be a luminous louvred band unit comprised of three equally spaced aluminum bands so designed as to illuminate themselves and the ceiling. The reflector shall be finished natural aluminum and contoured to direct all the light downward. Holes shall be provided in the top band for mounting on either 3/4" or 4" outlet box. Two porcelain medium base sockets shall be riveted to the reflector. The bottom of the fixture shall consist of a louvre made of concentric metal rings finished baked satin aluminum and spaced to provide 45° shielding. Concentric metal ring louvre lifts out for replacement of lamps. The fixture shall be approved by Underwriters' Laboratories, Inc., and shall be labeled as evidence thereof. The fixture shall be as manufactured by The Art Metal Company.



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No. 2280 14" Dia. 4 1/4" O.A. 1-100W
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Concentric Metal Louvres Ribbed Satin Aluminum.
Purchased for mounting on either 3/4" or 4" outlet box.
Made of Aluminum.



No. 2280
Concentric Metal Louvres have 45° shield.

Colling Walls	15"	18"	24"	30"
Beam feet	15"	18"	24"	30"
1	.11	.17	.27	.36
2	.22	.34	.54	.72
3	.33	.51	.81	1.08
4	.44	.67	1.08	1.44
5	.55	.84	1.36	1.80
6	.66	1.01	1.64	2.16
7	.77	1.18	1.92	2.52
8	.88	1.35	2.20	2.88
9	.99	1.52	2.48	3.24
10	1.10	1.69	2.76	3.60

Maintenance Factor—.85 Class .75 Average

This candlepower distribution curve was made with a 150 Watt I.F. Lamp. To arrive at candlepower of medium base lamp multiply by .75. The distribution of light is extremely wide. The spacing of the units should not exceed one and one quarter times the mounting height above the working plane. This unit is for general illumination.

This candlepower distribution curve was made with a 150 Watt I.F. Lamp. The distribution of light is extremely wide. The spacing of the units should not exceed one and one quarter times the mounting height above the working plane. This unit is for general illumination.

Colling Walls	15"	18"	24"	30"
Beam feet	15"	18"	24"	30"
1	.11	.17	.27	.36
2	.22	.34	.54	.72
3	.33	.51	.81	1.08
4	.44	.67	1.08	1.44
5	.55	.84	1.36	1.80
6	.66	1.01	1.64	2.16
7	.77	1.18	1.92	2.52
8	.88	1.35	2.20	2.88
9	.99	1.52	2.48	3.24
10	1.10	1.69	2.76	3.60

Maintenance Factor—.85 Class .75 Average

SPECIFICATIONS: These Round Recessed Units are of Single Unit construction as the reflector functions as the housing. This is made of 18-gauge Aluminum finished specular. The cast plaster ring holds the reflector and the lens frame together as a unit. The trim is drop hinged. The lamp operates in a vertical position. The unit is practically dust-tight. Approved by Underwriters' Laboratories, Inc.

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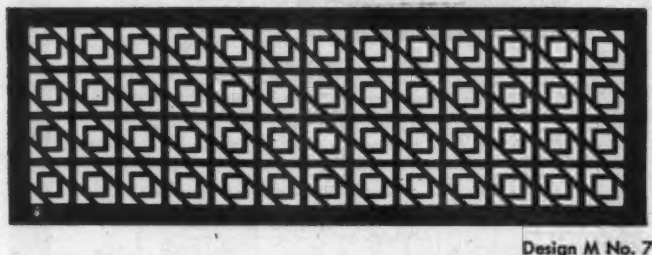
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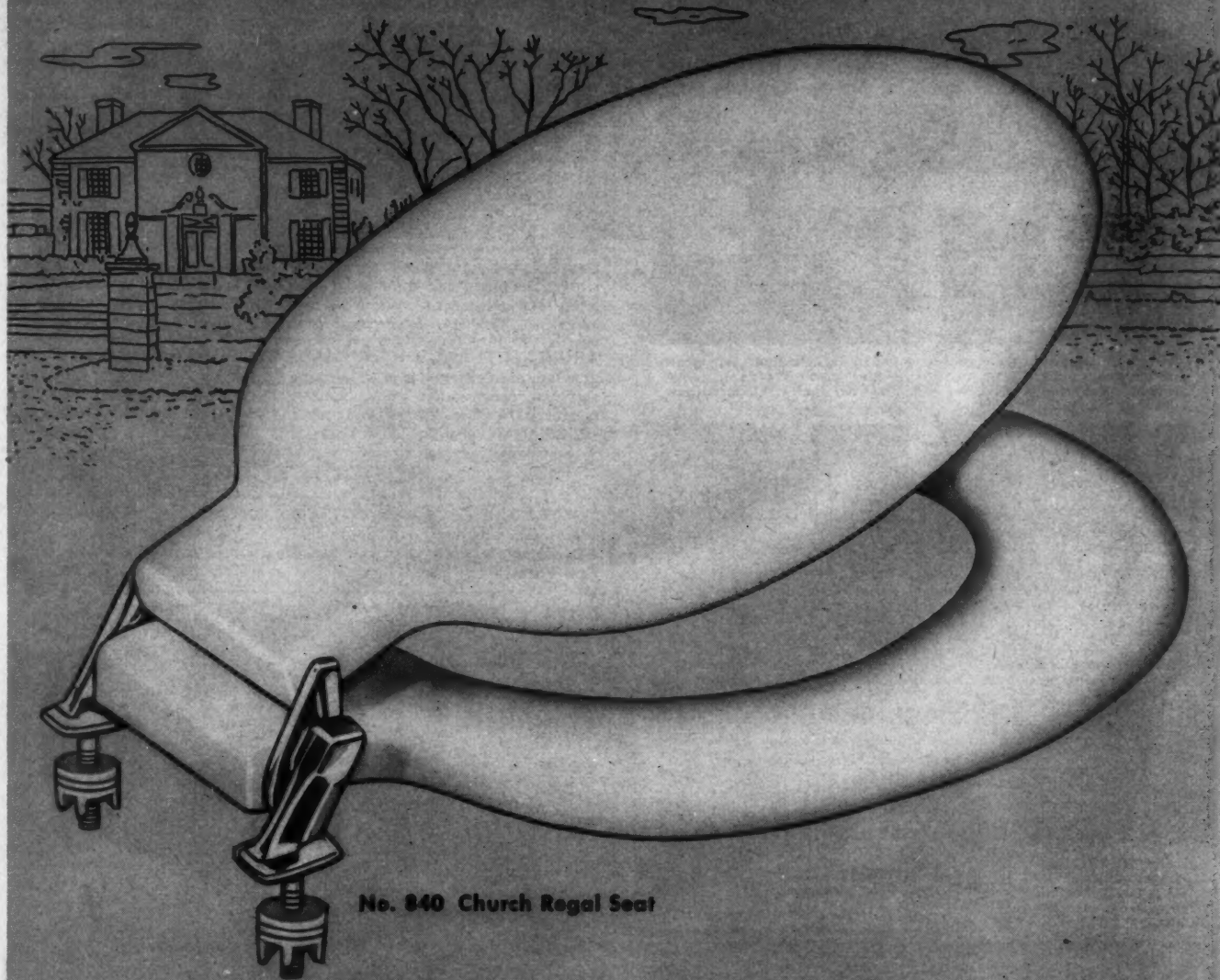
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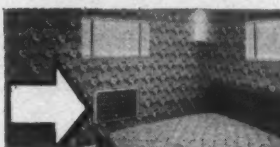
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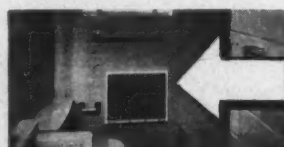
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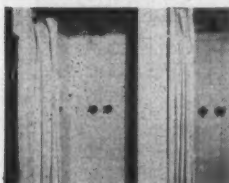


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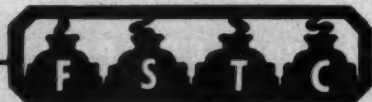


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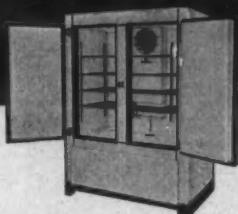


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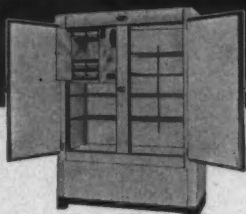


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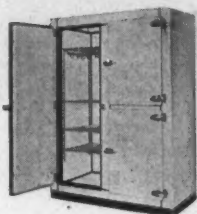
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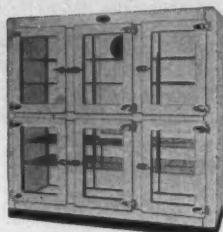
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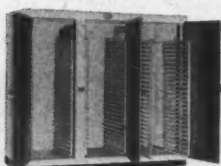
30 cu. ft. — 3 models



45 cu. ft. — 3 models

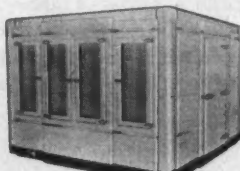


70 cu. ft. — 3 models



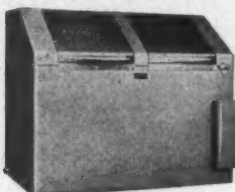
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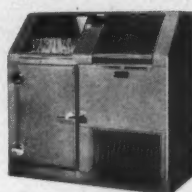
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30-2M	28.3	54½"	27½"	73½"	2 solid
30-21M*	26.0	54½"	27½"	73½"	2 solid
30-2MG	28.3	54½"	27½"	73½"	2 glazed
45-4S	47.0	54"	33¼"	73¼"	4 solid
45-4G	47.0	54"	33¼"	73¼"	4 glazed
45-3L	47.0	54"	33¼"	73¼"	3 solid
70-6S	73.5	79¼"	33¼"	73¼"	6 solid
70-6G	73.5	79¼"	33¼"	73¼"	6 glazed
70-5L	73.5	79¼"	33¼"	73¼"	5 solid
70-R	81 18" x 26" Bun Pans	79¼"	33¼"	73¼"	3 solid

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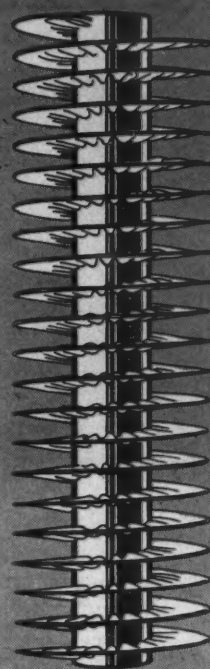
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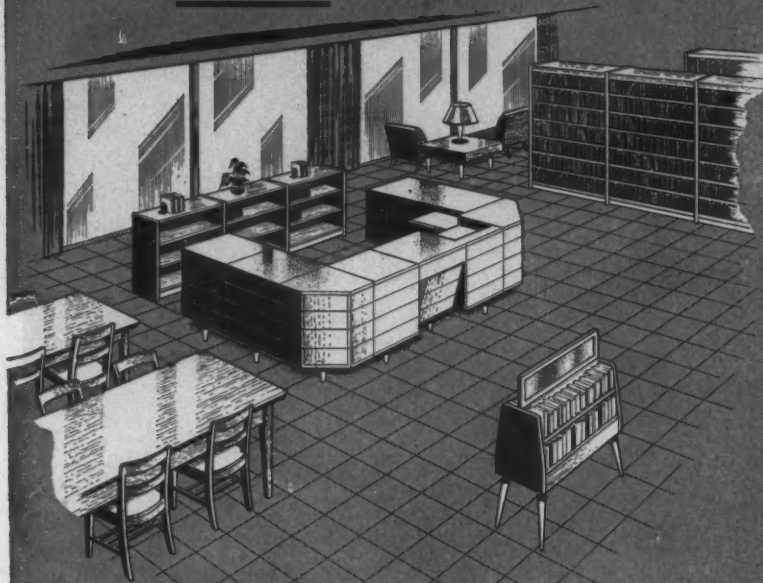
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The picture doesn't show the *sound reasoning* which provided the basis for the functional design of "New Life" Library Furniture.

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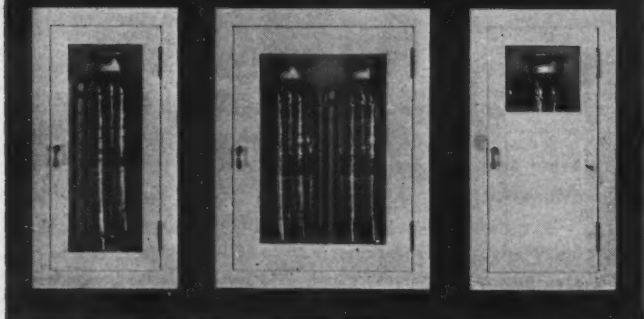
If you're planning to purchase library furniture, these are *some* of the elements you will want to *investigate carefully*. There are other important elements, too. Request our Catalog L-50. Ask that we have our field representative call. Then you can *properly* analyze, compare, and evaluate, and determine precisely what you want in *your* library furniture.

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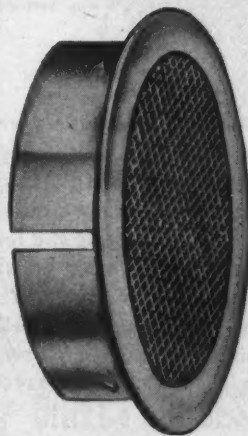


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All-aluminum "Midget" Louvers come in 5 convenient sizes 1", 2", 2½", 3 & 4".

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TRUMBULLITE is easily mounted. Fronts can be lined up regardless of uneven box installation. 12- through 20-

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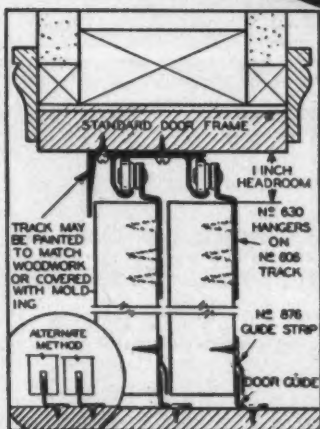
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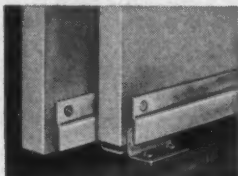
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The 600 Series includes Hangers for both $\frac{3}{4}$ " and $1\frac{1}{2}$ " by-passing doors. Track is aluminum.

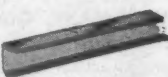


No. 876 Guide Strips eliminate grooving bottom of door. Save installation time and trouble.



No. 642
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For Single Doors

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THE Sterling 800 SERIES ANOTHER COMPLETE LINE OF HANGERS AND TRACK FOR RESIDENTIAL SLIDING DOORS



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For $\frac{3}{4}$ "
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Has many
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USES THRIFTY ARM-GLAZE

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Clean, safe, NON-STREAKING heat • from floor to ceiling. Each room is thermostatically controlled for individual comfort. HEATSUM CABLE is economical . . . in installation as well as every day operating costs. HEATSUM CABLE completely eliminates fuel storage problems, reduces fire hazards to a minimum, and saves critical materials. Specify HEATSUM CABLE for all residential, school and business construction.

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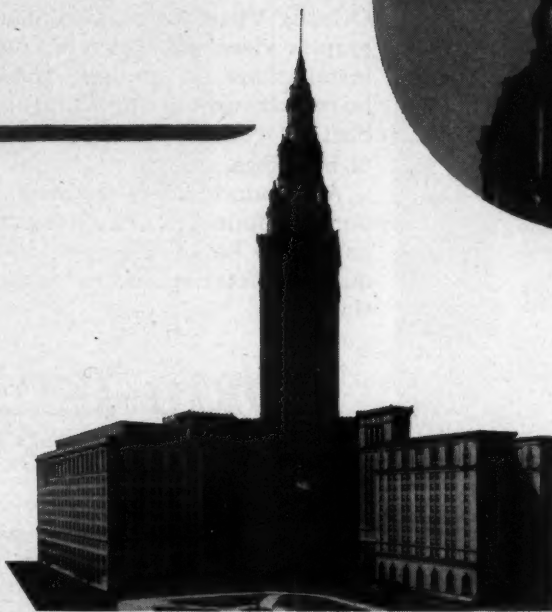
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where
the
elements

are
at
their
worst



The dome of the Terminal Tower, Cleveland, Ohio, 614 feet above the sidewalk, takes a beating from wind, rain, boiling sun and subzero temperatures. The exposure to elements, beyond the endurance of most building materials, is protected with Thoroseal, as shown in above photograph.



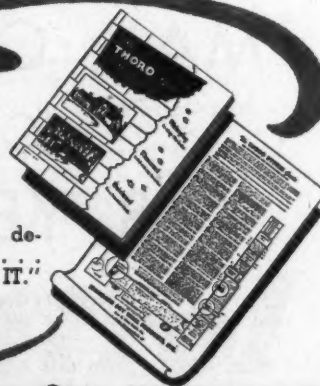
Photograph on left shows how Bob Reynolds, of H. Reynolds Company, of Cleveland, Ohio, stands on extreme edge of hanging scaffold, 614 feet above sidewalk.

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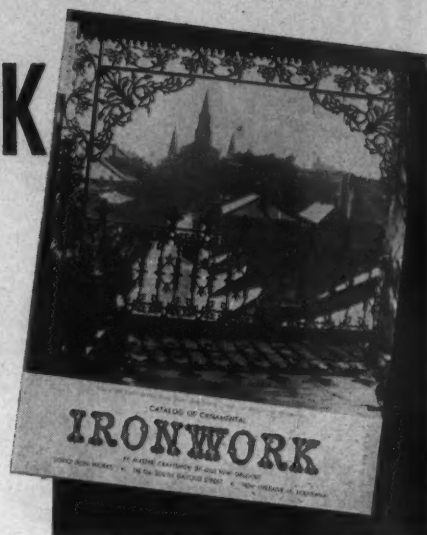
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Project Features: Outdoor swimming pool, four play grounds, baseball diamonds, wooded picnic areas, ample parking facilities.



One of the 384 Janitrol Gravity Furnace Installations at Park Lawn Manor. Control Cover removed shows simplicity. Quick assembly features hold down installation costs; three sizes, with 75, 100 and 125,000 Btu/hr input ratings meet most requirements for single compact houses or multiple housing units.



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Gas was specified as the heating fuel because of its cleanliness and its automatic, carefree, low cost operation.

Janitrol was specified because it is complaint-free engineered* with a proven record of dependable performance.

This happy combination... the most modern fuel and the most modern heating equipment can help you plan economical, carefree winter comfort for the single homes or multiple housing units you design.

A complete A.I.A. File on how and where Janitrol Gravity Systems are best applied, gives details and diagrams on the most modern installation practices. Be sure to write for your copy today, mention A.I.A. File 30-B.

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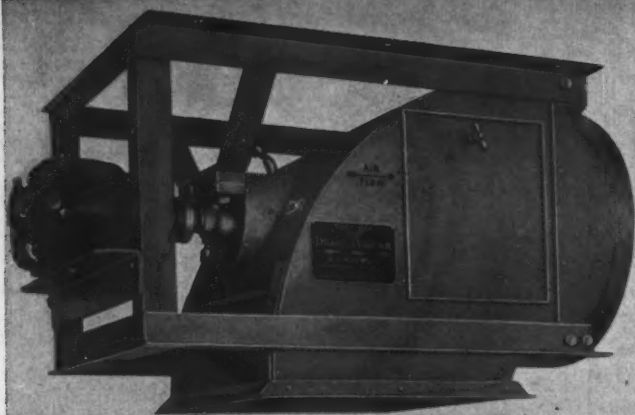
Janitrol

GAS-HEATING

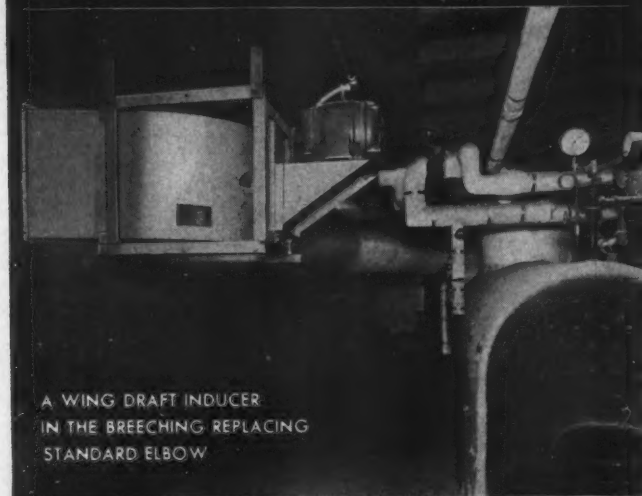
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A WING DRAFT INDUCER
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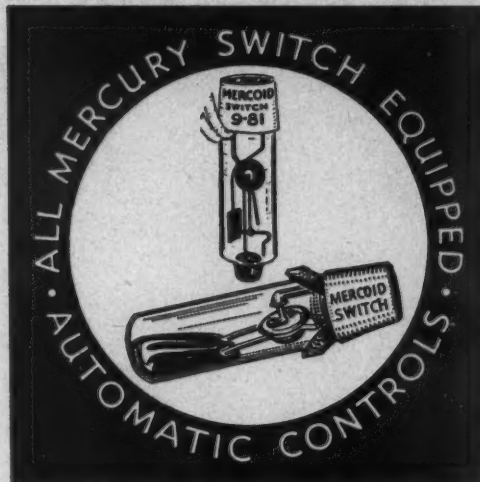
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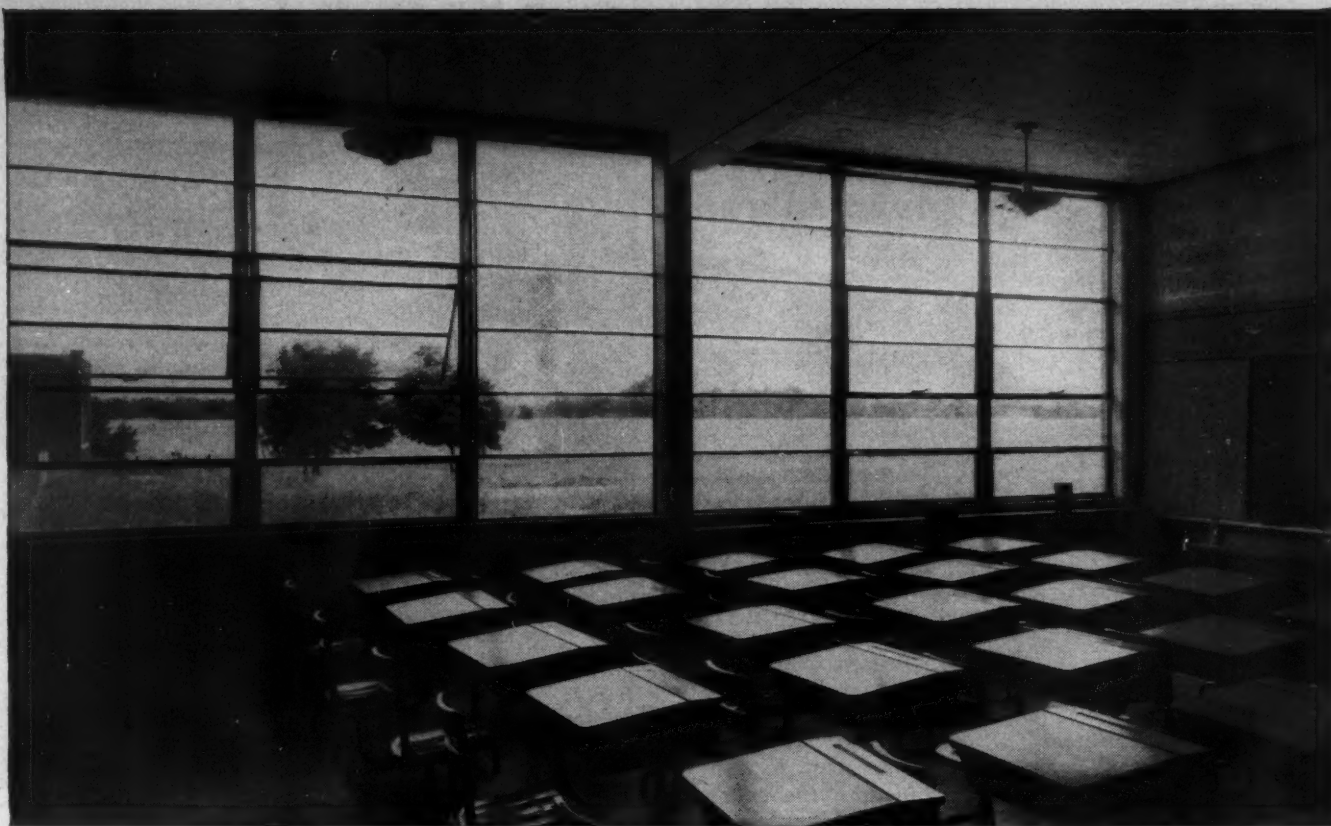
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Walter T. Anick, architect in Ann Arbor, designed this Custer Consolidated School in Monroe, Mich. He used a clerestory opposite the wall of windows seen in the picture above. Principal V. L. Gilliland is very happy with the Daylight Walls of clear glass and thoroughly convinced that they are the right way to light classrooms.

How to Give ALL Children Good Light

The requirements for good school lighting have been studied for years by experts and are set forth in the authoritative report, "Recommended Practice for School Lighting". There is no excuse for subjecting children to the strain which comes from too little light, when a Daylight Wall meets the recommended requirements. And does it economically!

Here is a Daylight Wall, clear flat glass from wall to wall and from sill to ceiling. Clear glass is used because it transmits more natural light than glass in any other form (up to 90.9%). It is extended all the way to the ceiling in order to admit as much light as possible, and because clear, flat glass does not obstruct vision.

Any nontransparent material between window lintel and ceiling obscures the view. It definitely ends the room, whereas clear glass permits ceiling lines to continue, apparently into infinity. This creates an illusion of spaciousness. The inside and outside worlds blend. Another consideration is that a Daylight Wall provides

control over ventilation, especially next to the ceiling where it is most effective. And—there's nothing like a breath of fresh air!

No matter what type of room you may be working on—hospital, office, restaurant, apartment, home or school—compare the cost of a Daylight Wall with a wall of nontransparent material; compare the cost of installation. Also, remember that clear, flat glass requires no interior finishing, and is easy to keep clean.

Then add to the economic advantages, the psychological advantages of Daylight Walls—the fact that people like to feel free, not cooped up. People enjoy Daylight Walls because they like lots of view, lots of space and lots of daylight. A Daylight Wall gives them all this.



DAYLIGHT WALLS

THAT DON'T OBSCURE VISION

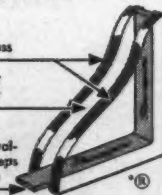
THERMOPANE • PLATE GLASS • WINDOW GLASS

FOR WINDOW INSULATION,
THERMOPANE® insulating glass with 1/2" of dry air hermetically sealed between two panes has twice the insulating value of single glass. This minimizes chilliness, drafts and heat loss at windows. THERMOPANE cuts air-conditioning costs by reducing the amount of heat entering during summer. Write for THERMOPANE literature, Libbey-Owens-Ford Glass Company, 19111 Nicholas Building, Toledo 3, O.

Two Panes of Glass

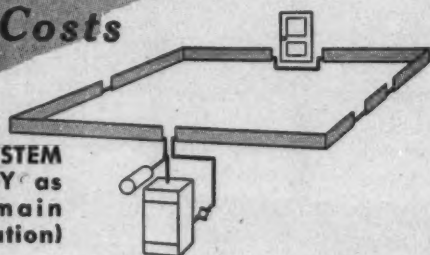
Blanket of dry air
insulates window

Bondomatic (metal-to-glass) Seal® keeps air dry and clean



Actually this Base-Ray Installation Cuts Costs

SERIES LOOP SYSTEM
with BASE-RAY as
part of the main
(forced circulation)



and it's as easy as **A B C** to hook up!

Study, for a minute, the diagram shown above. It tells the whole story. Installed in series, each BASE-RAY* panel becomes part of the main. This can mean a saving in labor, pipe and fittings up to 50% of installation cost. In many cases, this saving is the determining factor in the landing of contracts. Further details on this Series Loop System, recommended by I-B-R, are given in their new Guide No. 5.

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▲ Principal roof members are curved, riveted plate girders. Pinned at supports and crown, they have a constant depth, back to back of flange angles of 5 ft. 7 in. and rise 49 ft. 11 in. to provide a clear height at center of 75 ft.

◀ Interconnected by 2-story steel frame lean-tos ranging in width from 39 to 103 ft., the hangars form a building 1,148 ft. long and 219 ft. wide. Each hangar provides a 300 ft. clear floor space.

302' Steel-Arch Spans SIMPLIFY ERECTION . . .

PROVE MOST ECONOMICAL TYPE OF CONSTRUCTION

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GENERAL CONTRACTOR: Stock Construction Corporation.

STRUCTURAL STEEL: 3,600 Tons. Fabricated and erected by American Bridge Company.

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In-Wall equipment has been
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25" AND 30"

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Hydroment is used as a dust coat, floated and troweled into the topping. Millions of square feet installed annually.

See Sweet's 1951 Architectural file 9/Up or write

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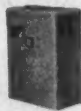
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marble

Window Stools

Twin Oaks Apartments,
Kansas City, Missouri. Vas-
kamp and Slezak, Architects.



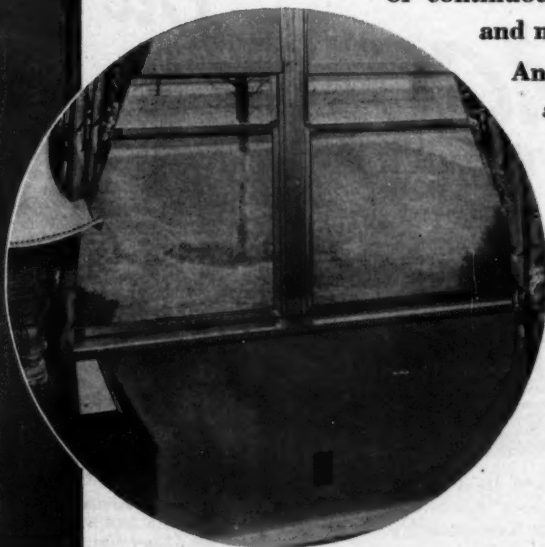
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— is the Choice for
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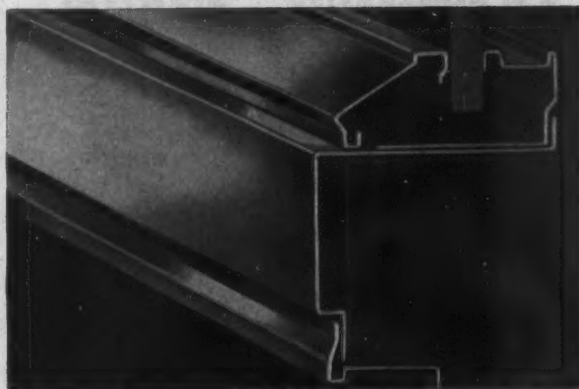
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HANDSOME, VERSATILE
STOCK ASSEMBLIES for STORES
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Oil or Gas!



WITH AN OUTSTANDING LINE
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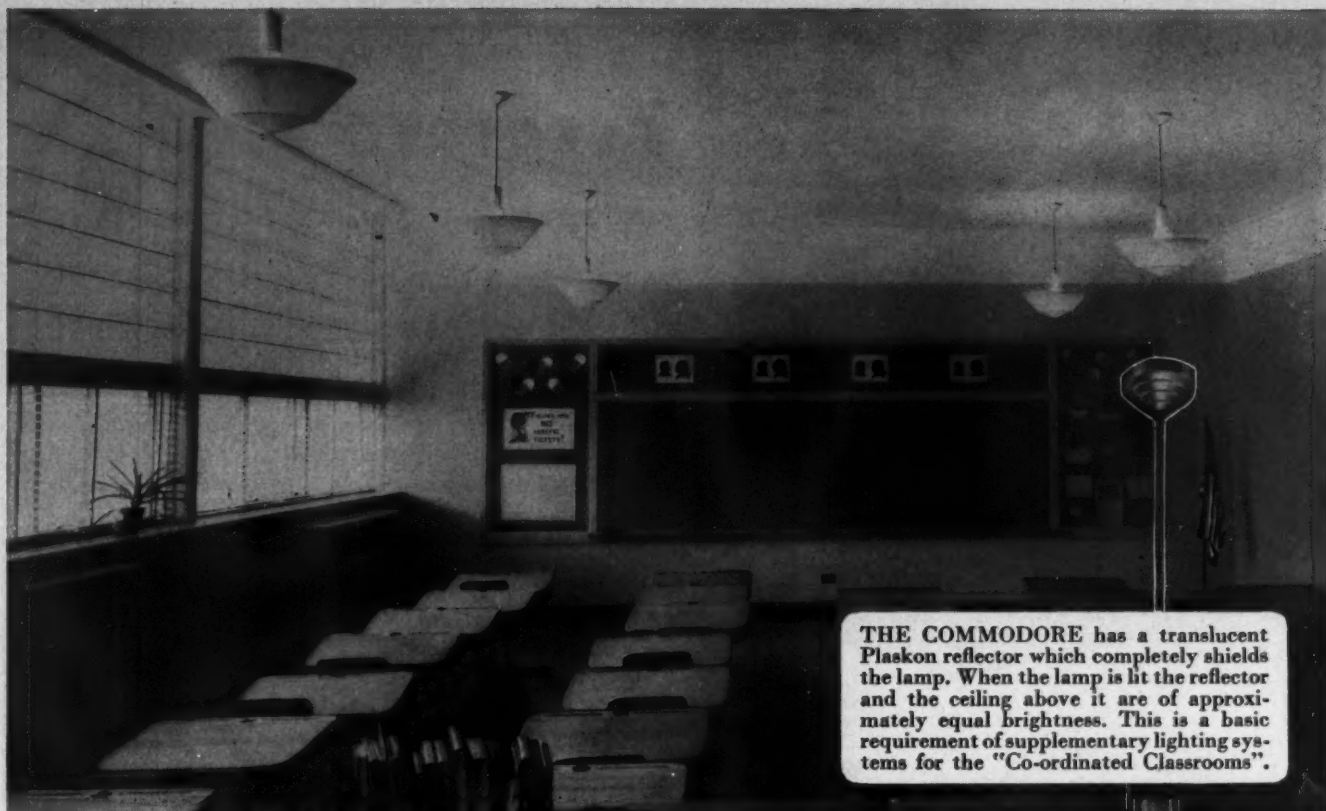
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THE COMMODORE has a translucent Plaskon reflector which completely shields the lamp. When the lamp is lit the reflector and the ceiling above it are of approximately equal brightness. This is a basic requirement of supplementary lighting systems for the "Co-ordinated Classrooms".

"Co-ordinated Classroom" in North Littleton Elementary School, Littleton, Colorado

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Architects: Atchison & Kloverstrom

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SCHOOL
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MOFFAT COUNTY HIGH SCHOOL
CRAIG, COLORADO

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① Only a luminous indirect luminaire such as the Wakefield incandescent Commodore (or the Wakefield fluorescent Star) will provide smoothly distributed, well balanced light, free from glare and sharp brightness contrasts.

② Only a luminous indirect fixture such as the Wakefield Commodore (or Star) will create three-dimensional seeing conditions by making the ceiling the primary light source, with the fixture itself and the side walls becoming a secondary source.

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Wakefield Over-ALL Lighting

BASIC FOR CO-ORDINATED CLASSROOMS



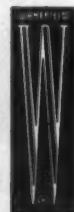
THE COMMODORE



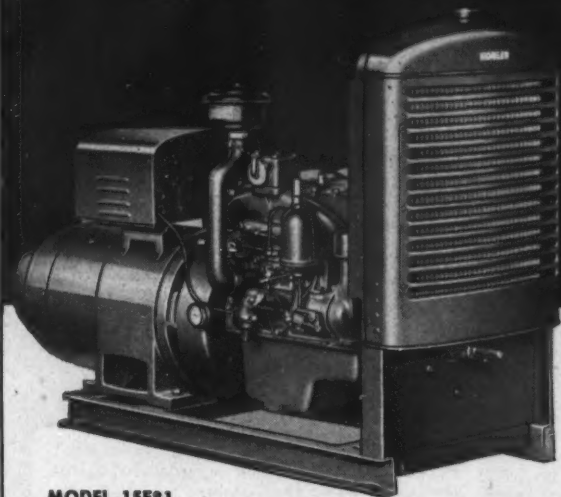
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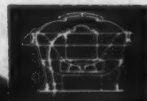
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Assistant to General
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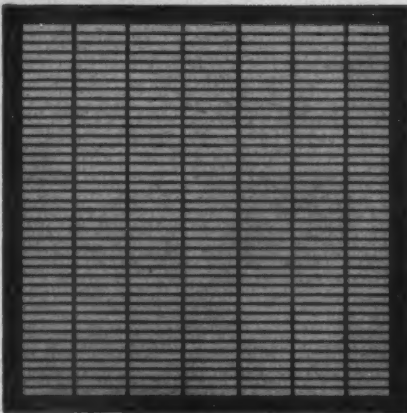
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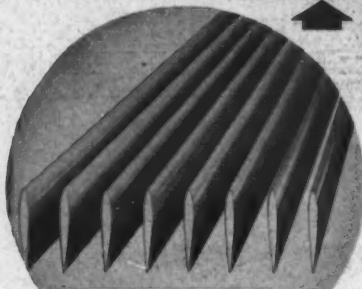
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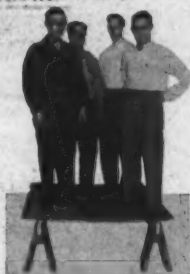
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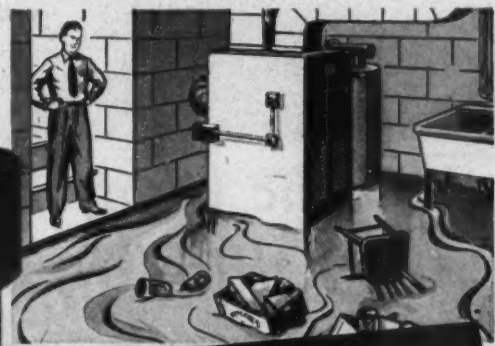
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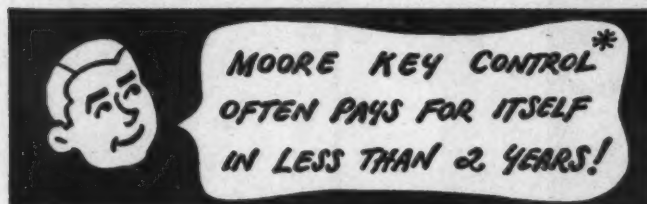
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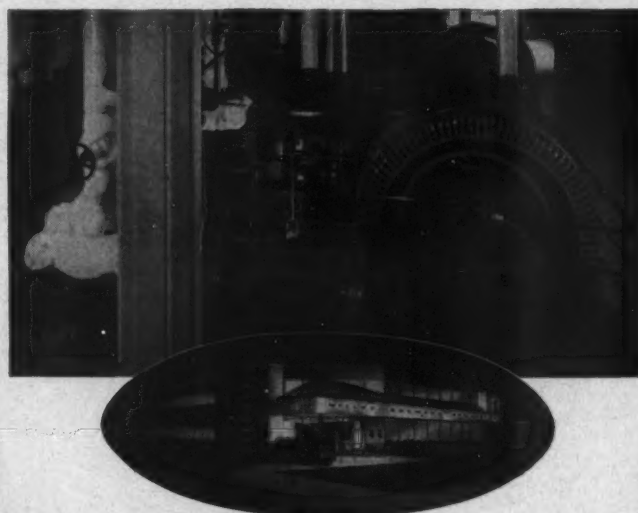
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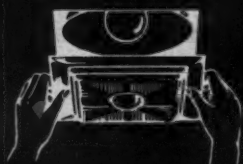
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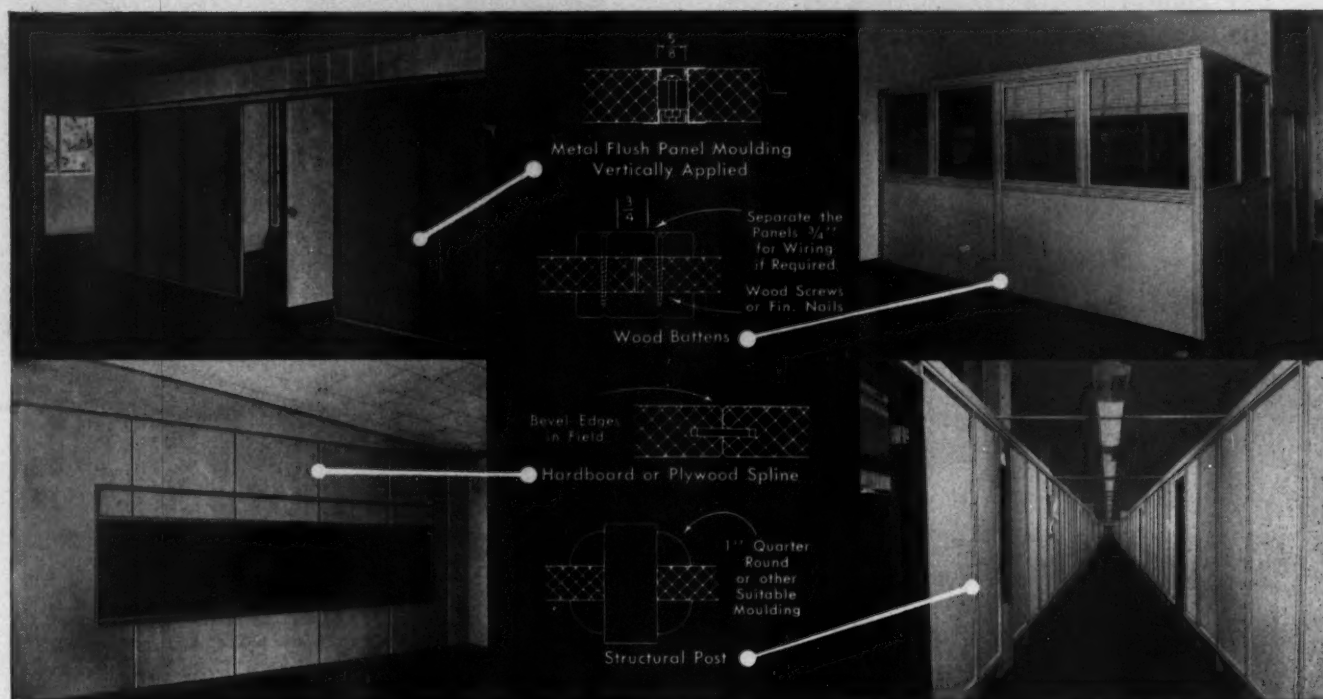
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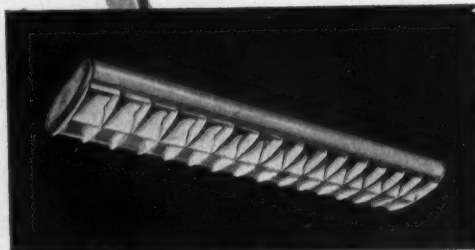
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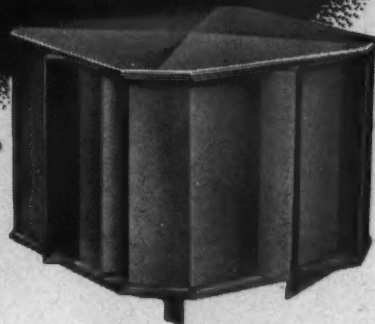
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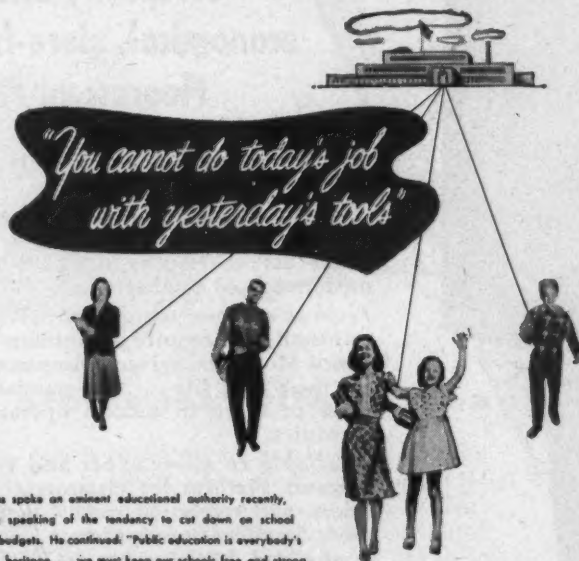
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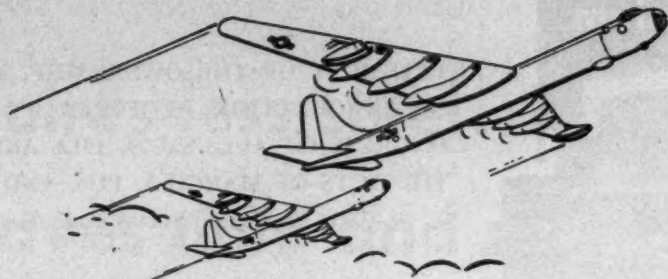


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Of ARCHITECTURAL RECORD, combined with American Architect & Architecture, published monthly at Concord, New Hampshire, for October 1, 1951.

1. The names and addresses of the publisher, editor, managing editor, and business managers are:

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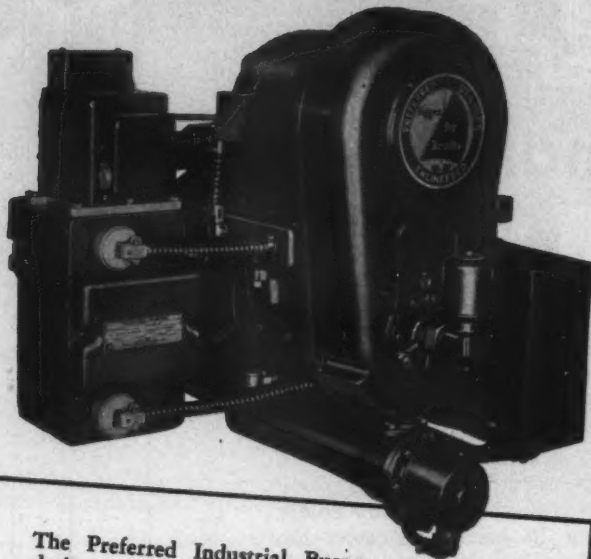
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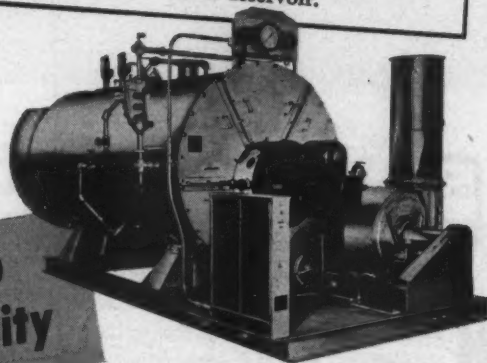
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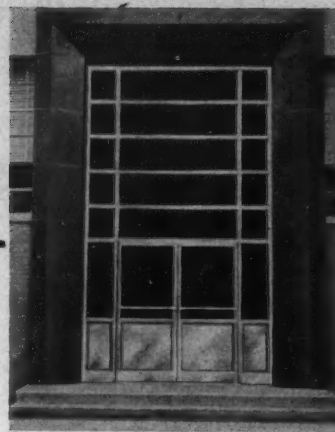
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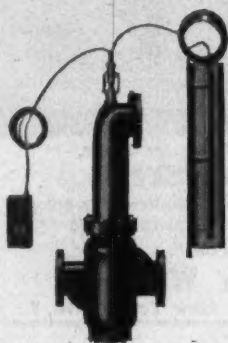
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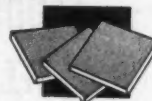
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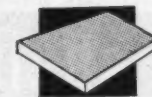
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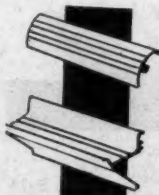
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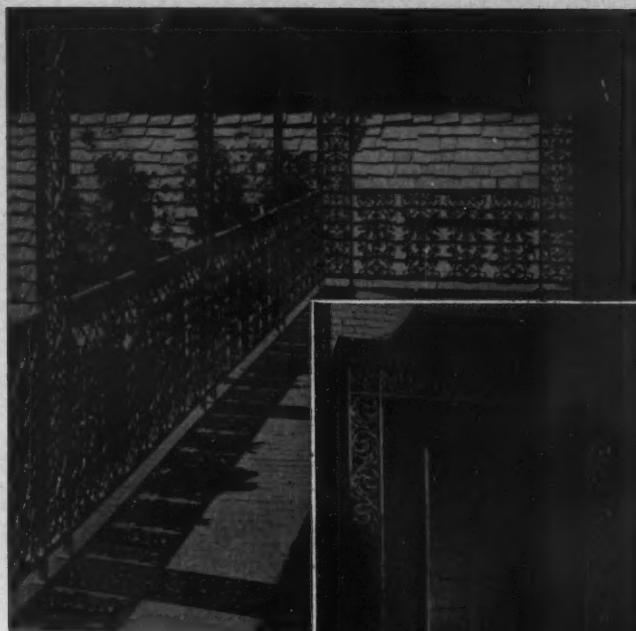
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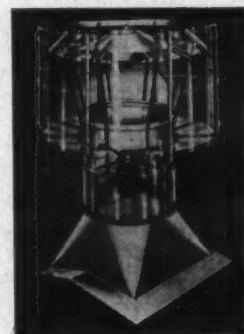
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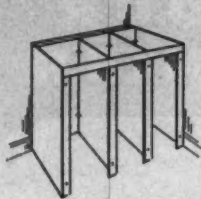
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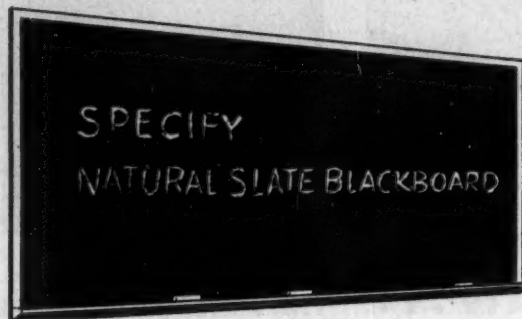
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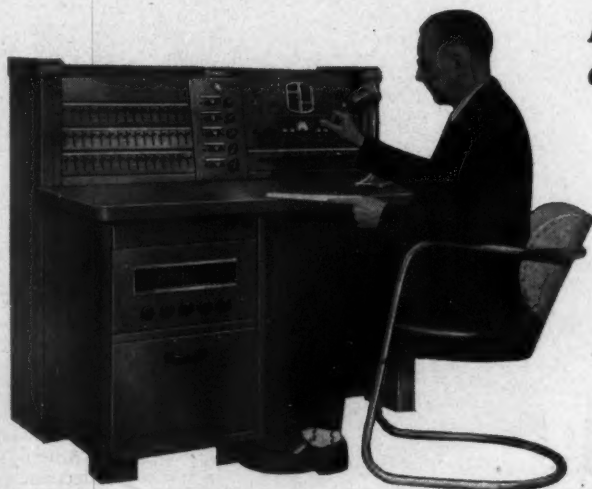
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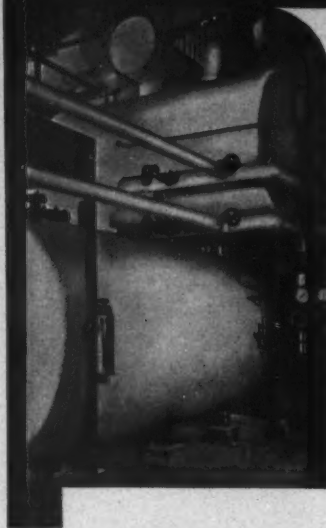


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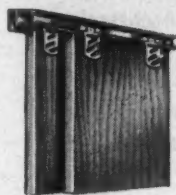
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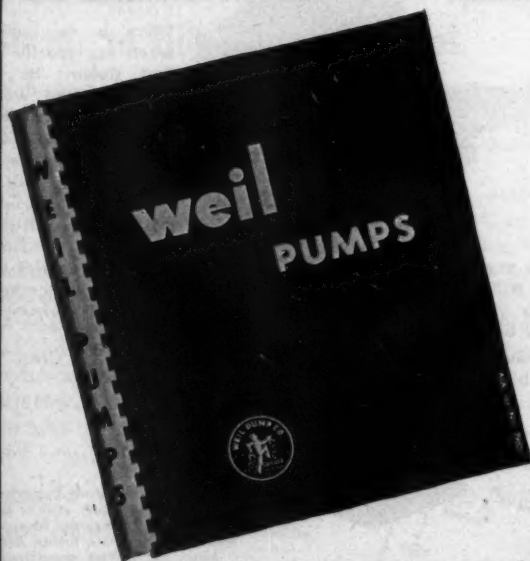
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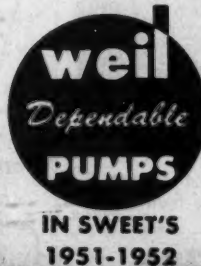


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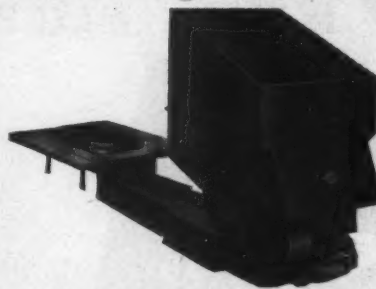
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CONSTRUCTION IN 1952

An appraisal of the outlook

*By Thomas S. Holden, President,
and Clyde Shute, Assistant Vice President,
Manager of the Statistical and Research Division*

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ARCHITECTURAL RECORD

NOVEMBER 1951

CONSTRUCTION IN 1952

An appraisal of the outlook

By Thomas S. Holden, President,

and Clyde Shute, Assistant Vice President,

Manager of the Statistical and Research Division

OURS IS A DYNAMIC ECONOMY with population increasing at the rate of two and a half million persons per year, with the most highly developed technology in history, with high-level production and high-level consumption, and with a fixed determination for continuous improvement of personal and community living standards.

In such an economy there is no lack of potential demand for every kind of building and engineering structure. In such an economy, construction does not require the artificial stimulus of unusual government expenditures. The experience of 1951 has demonstrated that defense mobilization could only be achieved by deferment of many pressing demands for civilian buildings and engineering structures.

CARRY-OVER DEMANDS

Construction projects which were refused allotments of critical metals by the National Production Authority in the fourth quarter of 1951 were deferred, not abandoned; their critical metal requirements can be reconsidered and granted in later quarters. Consequently, these projects represent a certain portion of construction demand that will carry over into 1952.

The civilian economy will press continuing demands for housing, schools, hospitals, churches and other community facilities. While residential building volume has about kept pace with current demand, the present rate of population growth will generate for some time to come a continuing demand for new housing facilities at something near the 1951 rate of production.

The marked rise in school-age population creates a demand for new school facilities that is one of the most pressing needs of the economy.

Growth of towns and cities stimulates demand for various other community facilities. The tremendous postwar increase in motor vehicles has accentuated an urgent nationwide need for highway improvement. Most of the large cities have shortages of office building space.

FAVORABLE FACTORS

A number of important factors which are present would normally tend to support large construction volume in 1952. The prospect is for full employment, increased industrial production and for over-all output of goods and services (gross national product) at a rate exceeding all previous records. The aggregate of disposable personal incomes, even after increased tax payments, will probably exceed somewhat the equivalent figure for 1951.

In the field of home-mortgage credit there has been an easing of the controls imposed under Regulation X; relaxation had the principal aim of increasing production of single-family houses to cost (with land) up to \$12,000. Low-priced houses are also encouraged under the regulations of the Controlled Materials Plan; those requiring less than certain specified amounts of steel, copper and aluminum may proceed under self-certification (meaning that they do not require special allocations of those critical materials).

The mortgage money market has improved in another important aspect. When prices of government bonds fell below par in the spring of 1951, other bond prices dropped in market value. It was no longer profitable, as it had been in 1950, for lending institutions to sell bonds and invest the proceeds in mortgages. Therefore the previously ample supply of mortgage money became some-

TABLE 1: ESTIMATED PHYSICAL VOLUME OF BUILDING

(in accordance with contract records for 37 eastern states; figures in millions of sq ft)

BUILDING CLASSIFICATION	YEAR 1951 ESTIMATE *	YEAR 1952 ESTIMATE	PERCENTAGE CHANGE
Commercial	71	45	-37
Manufacturing	150	145	- 3
Educational and Science	104	95	- 9
Hospitals and Institutional	30	25	-17
Public	9	7	-22
Religious	24	20	-17
Social and Recreational	11	9	-18
Miscellaneous Nonresidential	46	45	- 2
Total Nonresidential	445	391	-12
Residential	675	540	-20
Total Building	1120	931	-17

TABLE 2: ESTIMATED NUMBERS OF NEW DWELLING UNIT STARTS

(in thousands)

	YEAR 1951 ESTIMATE *	YEAR 1952 ESTIMATE	PERCENTAGE CHANGE
Dodge coverage basis	570	460	-19
BLS over-all basis	1050	850	-19

**TABLE 3: ESTIMATED DOLLAR VOLUMES
OF BUILDING AND ENGINEERING PROJECTS**

(in accordance with contract records for 37 eastern states; figures in millions of dollars)

CLASSIFICATION	YEAR 1951 ESTIMATE *	YEAR 1952 ESTIMATE	PERCENTAGE CHANGE
TOTAL			
(PRIVATE AND PUBLIC OWNERSHIP)			
Nonresidential	6478	6067	- 6
Residential	6109	5136	-16
Total Building	12,587	11,203	-11
Public Works and Utilities	2656	2552	- 4
Total Construction	15,243	13,755	-10
PRIVATE OWNERSHIP			
Nonresidential	3648	3643	0
Residential	5403	4436	-18
Total Building	9051	8079	-11
Public Works and Utilities	381	500	+31
Total Construction	9432	8579	- 9
PUBLIC OWNERSHIP			
Nonresidential	2830	2424	-14
Residential	706	700	- 1
Total Building	3536	3124	-12
Public Works and Utilities	2275	2052	-10
Total Construction	5811	5176	-11

*Nine months actual, last three months estimated

what suddenly restricted in the middle of this year.

In recent months vast numbers of Americans who had drawn down their savings accounts to buy durable goods reversed themselves; they began saving, instead of spending, and gradually began to pile up new savings funds in the institutions. Amortization payments plus payments in satisfaction of maturing mortgages also tended to build up available supplies of mortgage money.

Mortgage money thus promises to be adequate in 1952. Only 38 per cent of the economists who participated in F. W. Dodge Corporation's recent opinion survey thought that shortage of mortgage money would be a limiting factor on residential building volume next year. Less than 21 per cent of them thought shortage of mortgage money would be a limiting factor on private nonresidential building volume. There was among them some preponderance of opinion favoring a moderate increase in mortgage interest rates.

This same group of economists showed a preponderant expectation for moderate increases next year in the cost-of-living index and in the index of wholesale prices, rather than runaway prices. By inference, any construction cost increases should be within a moderate range.

MATERIAL SUPPLY

The factors favoring large construction volume in 1952 are impressively strong. Perhaps more important than any others of these in determining actual volume will be: (1) the supplies of critical metals available for construction and (2) the operation of government controls.

Accompanying the carry-over of numerous construction demands there is a carry-over of the austerity program that was originally anticipated for the year 1951.

Material shortages that actually developed required a less drastic cutback in over-all construction volume than was indicated in the advance construction estimates for 1951 that were made by government commentators.

In spite of credit restrictions and limitation orders affecting specific classes of construction, the 1951 dollar volume will probably reach the highest figure on record, and the physical volume will be higher than that of all previous years except 1942 and 1950; this year's volume has exceeded everybody's advance estimates.

An important reason for this has been that the original timetable for defense production has not

quite been met. Quantity output of most military end products is still to come. Frequent enlargement of the military production program has also had the effect of delaying the date of maximum impact of the defense program on the civilian economy.

As a consequence of this and other factors, the turning point when augmented supplies of critical metals will catch up with the most urgent demands has been postponed somewhat. According to government authorities, the supply situation promises only minor improvement in the first quarter of 1952 over the fourth quarter of 1951.

However, there have been intimations from informed sources that over-all fourth-quarter requirements for critical metals were considerably overestimated for purposes of the Controlled Materials Plan and that reports of current and prospective shortages have been exaggerated. In particular, it has been stated by high authorities in the steel industry that the estimated requirements for structural steel were highly unrealistic. Similar reports are current with reference to aluminum.

It is rather generally expected that the supply situation with respect to both steel and aluminum will improve steadily during 1952, provided there are no serious work stoppages. For both these metals new capacity is being steadily added.

If the more optimistic of current reports are reasonably correct, it would appear quite possible that controls of these metals might be dropped some time in the course of the coming year. If the operation of these and other controls should develop awkward situations embarrassing to the administration, it may prove politically feasible to ease up on them as election time approaches.

It has been apparent all along that copper might continue critical longer than the other metals; the problem of increasing copper supplies is much more complicated than in the case of steel and aluminum. If the more gloomy of the current predictions about copper supply are realized, it would appear that there might be a technological shift away from copper and brass products to other more plentiful and less expensive materials, at least for some of the construction uses of these metals that have enjoyed wide popularity during the past thirty years. Under a free economy such adjustments would tend to work themselves out through the play of price competition.

Shortages of the critical metals, whether actual

or artificially created through the operation of controls, vitally affect the production and supply of many kinds of fittings and plumbing, heating and air-conditioning items, as well as basic structural materials.

There is no indication of potential shortage of any important construction materials outside the field of metals.

DETERRENTS

A possible deterrent to investment confidence and to spending for new construction may exist in the heavily increased tax burden recently laid upon the American people. Leading congressmen of the dominant Democratic Party have stated publicly that the latest tax bill (which falls short of providing enough revenue to balance the federal budget) reached the limit of the tax burden that could be safely imposed upon the economy. State and local taxes (which finance public improvements, among other things) have been rising along with the big increases in federal levies. Our combined governments have imposed upon the economy a tax burden well beyond the 25 per cent of the national income which is supposed to be the maximum safe load.

It seems a little early to estimate just what the public reaction to the latest tax increase will be. Along with this uncertainty there is a growing public concern about the possibilities of inflation.

Another factor to be given weight is the undercurrent of uneasiness as to whether the recent rate of expansion of our economy can be maintained without setbacks. However, the opinion that there will be a setback before the end of 1952 appears to be very definitely a minority opinion.

But, in spite of the very real economic gains of recent years, of current real growth factors (population, technology, momentum of living standards improvement) and of promising potentials of future growth, there is a growing doubt as to whether the nation's potentials can best be attained by profligate public expenditure, continuous inflation and continuous depletion of our basic resources for the benefit of ever-increasing international commitments.

There is certainly no proof that this present generation has achieved perpetual motion in economics any more than did the generation whose theories of uninterrupted prosperity were rudely shattered in 1929.

To record this element of uneasiness that exists

in business circles today is not to endorse any particular anticipation of business setbacks hereafter, but to recognize a degree of instability in the present situation which must be given weight in any appraisal of future prospects.

Today's optimism must necessarily be a qualified optimism; it must find its justification in a firm faith that the American people have reserves of common sense that will correct the excesses of government in time to avert the more serious troubles that some people expect.

THE 1952 CONSTRUCTION TREND

It seems obvious that the fourth-quarter dip in contract volume will carry over into 1952; it might even continue through to the middle of the year. If the anticipated improvement in the metals situation and consequent easing of controls take place, there should be a definite uptrend of contract volume in the second half of 1952.

In this anticipation we differ from the majority opinion of economists who participated in F. W. Dodge Corporation's opinion survey in October; they indicated a slight drop in activity during the second half of next year.

The estimates shown in the attached tables indicate for 1952 a 17 per cent decline from 1951 in new building floor space, corresponding to an 11 per cent decline in dollar volume of building contracts. In these estimates an average construction cost increase of five per cent has been assumed.

Combined with the building volume estimates are figures indicating a moderate increase in privately-owned utilities and a moderate decrease in public works.

The resulting over-all construction figure indicates a 10 per cent decline in dollar volume of building and engineering contracts in 1952 as compared with 1951.

The indicated declines in commercial building and social and recreational projects are in line with curtailments decreed by the National Production Authority.

Moderate declines in educational and science buildings, hospitals and institutions, public and religious buildings are estimated.

The indicated three per cent decline in new manufacturing floor space may be accompanied by a substantial dollar increase in this classification; the classification included in 1951 several huge atomic energy projects which could only be recorded as to estimated dollar values of the contracts, no

floor space figures being available. There are likely to be additional atomic energy projects in 1952.

Military construction is not separately classified in the Dodge statistical tabulations. Military building projects are apt to be classified as commercial, manufacturing, miscellaneous non-residential, or miscellaneous residential, according to functional types. Military engineering projects fall into the public works and utilities categories.

There will be a very large volume of offshore military construction in 1952, which will employ numbers of American architectural, engineering and contracting firms, and will use large quantities of critical materials. No attempt is here made to estimate the volume of this work, though the prospect of it has been given consideration in estimat-

ing next year's domestic construction volume. All-out war would, of course, wreck all estimates.

Residential building volume for 1952 is estimated in conformity with the figure cited in Defense Mobilization Director Charles E. Wilson's third quarterly report to the President, 850,000 new non-farm dwelling unit starts. The residential floor space figure in the table reflects an expectation of smaller average unit sizes in 1952; the dollar figure an estimated moderate rise in building costs.

These estimates are believed to be conservative. Actual construction volumes in 1952 are, perhaps, a little more likely to exceed the indicated figures than to fall short of them.

The inherent strength of the American economy is great; the inherent urge to build is very strong.

ECONOMISTS SEE MODERATELY RISING BUSINESS TREND IN 1952

NEITHER RUNAWAY PRICES, large scale business upsets nor other sensational developments are indicated for next year by leading economists.

On the contrary, moderate upward trends in wholesale prices, in cost of living and in total national output of goods and services are anticipated for 1952, according to a substantial majority of economists polled by F. W. Dodge Corporation in an October opinion survey.

Of the 128 respondents to a mail questionnaire, 69 are in the fields of business, private finance and private economic services; 48 in the universities; and 11 in government.

Among the 128, exactly half project their 1952 estimates on the basic assumption that the armed forces of the United States will be fighting next year on about the same scale as in 1951. Eighteen assume larger scale fighting; 37 assume fighting on a lesser scale than at present; nine make no statement as to the scale of fighting they expect.

In general the minority group which assumes larger scale fighting next year estimates bigger

rises in industrial production, wholesale prices and living costs than does the majority group. The minority group expecting a reduced scale of fighting tends to anticipate some falling of business activity and prices during the second half of 1952.

GROSS NATIONAL PRODUCT

A continuous rise throughout 1952 in total output of goods and services (gross national product) is expected by 92 economists, while 34 of them expect a declining trend in this over-all item in the latter part of next year. The average of all estimates submitted indicates an annual output rate of \$334.3 billion in the fourth quarter of this year and \$348.6 billion in the fourth quarter of 1952, compared with the government-estimated \$328 billion in this year's third quarter.

CONSUMERS' PRICE INDEX

This expected dollar gain in the nation's output would result in part from increased physical volume of goods, in part from higher prices. However,

the average of expected price changes is very moderate indeed. The consumers' price index (frequently called the cost of living index) shows the following trend, as averaged from the estimates of 127 economists: August 15, 1951 (Bureau of Labor Statistics actual figure), 185.5; December 15, 1951, 186.8; June 15, 1952, 189.8; December 15, 1952, 191.9. These index numbers are based on the average for the years 1935-1939 taken as 100.

This certainly indicates no general expectation of runaway consumer prices. A continuous rise in this index to the end of 1952 is expected by 110 respondents; only 14 expect the index to be lower in December 1952 than in December 1951. Only 16 respondents expect the December 1952 index to exceed 195.

WHOLESALE PRICES

Wholesale prices are expected by a considerable majority to trend moderately upward. Compared with an August 1951 index of 178, as recorded by the U.S. Bureau of Labor Statistics, the following are averages of future index numbers as estimated by 127 economists: December 1951, 179.7; June 1952, 183.0; December, 1952, 185.3. These index numbers are based on average prices in the year 1926 taken as 100. One hundred two of the economists expect wholesale prices to be higher in December 1952 than in December 1951. Only 27 out of 127 respondents expect this index to be higher than 190 at the end of next year.

MODERATE WAGE INCREASES

An expectation of moderate wage increases is generally indicated by survey respondents. Average hourly earnings of production workers in durable goods manufacturing (reported by the Department of Labor at \$1.693 in August 1951) are expected to reach the following levels: \$1.709 in December 1951; \$1.752 in June 1952; \$1.786 in December 1952. These figures represent averages of 109 sets of estimates.

In non-durable goods manufacturing, average hourly earnings (\$1.480 in August) are expected to be \$1.503 in December 1951, \$1.535 in June 1952, and \$1.561 in December 1952.

In building construction, average hourly earnings (\$2.196 in July of this year) are expected to be \$2.220 in December of this year, \$2.252 in June of next year, and \$2.274 in December 1952.

No questions were asked regarding anticipated increases in pension and other fringe benefits, such

questions being considered too complicated for the purposes of this general survey.

INDUSTRIAL PRODUCTION

Preponderant opinion on industrial production is that it will rise continuously from now to the end of 1952. One hundred one economists out of 125 expect the Federal Reserve index to be higher in December 1952 than in December 1951. Of the total number a minority of 27 expect a drop in the index between June and December of next year. Compared with an index of 218 for last August, average expectations are: 222.4 in December 1951; 228.2 in June 1952; 230.2 in December 1952.

MODERATE CONSTRUCTION DECLINE

Average expectation of 114 economists is for a moderate decline in dollar volume of construction. In terms of the overall construction estimates regularly compiled by the Departments of Commerce and Labor, the following monthly average figures are estimated by survey participants: (compared with a \$2,529 million average during the first 8 months of 1951) \$2,437 million per month during the last four months of 1951, \$2,399 million per month during the first half of 1952, \$2,304 million during the second half of 1952.

Converted into annual totals these figures amount to \$29,980 million for calendar 1951, \$28,218 million for calendar 1952. The indicated drop in dollar volume is six per cent.

HOUSING STARTS

Compared with an average of 94,000 new non-farm dwelling unit starts per month up to the end of last August, 116 economists indicate their average expectation of 74,900 units per month during the remainder of this year and 77,100 per month during all of 1952. On an annual basis this figures out: a total of 1,051,600 for the year 1951 and a total of 925,000 units for 1952. For both years these figures are somewhat higher than current government estimates.

WHEN WILL CONTROLS TERMINATE?

Optimism as to early termination of economic controls is rather scattered among those who indicate their expectations on this question.

Use controls on steel are expected to terminate before the end of 1952 by 31 out of 105 respondents; before the end of 1953 by 81; before the end of 1954 by 92. Median date for expected termina-

tion of steel controls is second quarter of 1953.

On copper, 20 out of 104 expect controls to end by the end of the year 1952; 71 by the end of 1953; 90 by the end of 1954. Median date of expected termination is third quarter 1953.

On aluminum, 27 out of 105 expect controls to end by the end of next year, 78 by the end of 1953; 97 by the end of 1954. Median date of expected termination is fourth quarter 1953.

Controls on prices are expected to end some time in 1952 by 21 out of 107; by the end of 1953 by 69; by the end of 1954 by 99. The fourth quarter 1953 is the median of expected termination dates.

Controls on wages and salaries will end some time next year, according to 23 out of 106 respondents; by the end of 1953, according to 69; by the end of 1954, according to 93. Median of expected termination dates is fourth quarter 1953.

Several of the more cheerful respondents indicate that easing of controls might come with the

approach of election time next year; some think a change of administration might hasten the ending of controls in early 1953; some in gloomy terms intimate that controls may last indefinitely.

MORTGAGE MONEY

Apparently mortgage money should be plentiful next year.

Only 45 out of 118 responding to the question think that shortages of mortgage money will be a limiting factor in residential building volume next year. Only 24 out of 116 respondents think mortgage money shortage will limit private nonresidential building.

On the matter of mortgage interest rates there is a rather slight preponderance of opinion predicting an upward trend.

Out of 121 answers, 58 indicate an uptrend (some noting that it would be quite moderate in extent), 57 indicate stable interest rates, and 6 indicate a downtrend.

PARTICIPANTS in the survey, besides several who asked anonymity, were:

A. G. Abramson, SKF Industries; M. A. Adelman, M.I.T.; E. E. Agger, Rutgers; Robert S. Aries, R. S. Aries & Assoc.; H. B. Arthur, Swift & Co.; Harold E. Aul, Calvin Bullock; Paul T. Babson, United Business Service; L. Durward Badgley, Mutual Life; Robert W. Bailey, United Air Lines; C. Canby Balderston, Wharton School of Finance; Horace R. Barnes, Franklin & Marshall Col.; Louis H. Bean, U. S. Dept. of Agriculture; Claude L. Benner, Continental American Life; E. G. Bennion, Standard Oil, N. J.; William A. Berridge, Metropolitan Life; E. H. Boeckh, E. H. Boeckh & Assoc.; Chelcie C. Bosland, Brown U.; Elmer C. Bratt, Lehigh U.; Waite S. Brush, Consolidated Edison; F. A. Buechel, Houston Chamber of Commerce.

Robert W. Burgess, Western Electric; Francis J. Calkins, Marquette U.; C. B. Camp; Cecil C. Carpenter, Kentucky U.; John J. Carter, Kingan & Co.; Francis R. Cella, Oklahoma U.; Arnold E. Chase, National Production Authority; Homer V. Cherrington, Northwestern U.; Ewan Clague, Bureau of Labor Statistics; Phillip S. Clements, Loomis, Sayles & Co.; Kenneth B. Colby, Univis Lens Co.; Miles L. Colean; Neil Carothers; Donald R. Cowan, Michigan U.; Dudley J. Cowden, N. C. U.; E. H. Cramer, Federal Deposit Insurance Corp.; C. P. Cronk, Bausch & Lomb Opt. Co.; William W. Cumberland, Ladenburg, Thalmann & Co.; Donald H. Davenport, NYS Dept. of Com-

merce; W. M. Dennis, American Cyanamid; F. A. Dewey; Charles A. Dice, Ohio State; W. J. Donald, Natl. Elec. Mfrs. Assn.

Leonard A. Drake, Greater Phila. Chamber of Commerce; Stahl Edmunda, Northwestern National Life; R. J. Eggert, Ford Motor Co.; Nathanael H. Engle, Washington U.; Bay E. Estes, U. S. Steel; Lloyd M. Faust, Kansas U.; Robert Ferber, Illinois U.; M. B. Folsom, Eastman Kodak Company; Morris D. Forkosh, Brooklyn Law School; H. G. Fraine, Wisconsin U.; John D. Gaffey; Roy L. Garis, Southern California U.; Frank R. Garfield, Board of Consumer Research; Edwin B. George, Dun & Bradstreet; Charles A. Glover, A. T. & T.; William L. Gregory, Easton-Taylor Trust Co.; John A. Griswold, Dartmouth Col.; Albert Haring, Indiana U.; John M. Hartwell, Jr., Ford Division; Walter E. Hoadley, Jr., Armstrong Cork; Walter M. Hollowell.

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Illinois U.; Marion Marks, Crown Zellerbach Corp.; Stewart M. Marshall.

Alonzo B. May, Denver U.; Robert W. Mayer, Illinois U.; David C. Melnicoff, Phila. Federal Reserve Bank; Oswald E. D. Merkt, Pa. Co. for Banking & Trusts; D. W. Michener, Chase National Bank; John Perry Miller, Yale U.; Royal E. Montgomery, Cornell U.; Robert R. Nathan, Robert R. Nathan Assoc.; P. Neff, U.C.L.A.; M. R. Neifeld, Beneficial Management Corp.; Robinson Newcomb; Paul H. Nystrom, Columbia U.; J. E. Pogue, Chase Natl. Bank; E. L. Quirin, Babson's Reports; F. E. Richter; J. H. Riddle, Bankers Trust; George L. Ridgeway, I.B.M.; John G. Rolph; Wayne Mark Stevens. John H. Sadler, Kroger Co.; Benedict Saurino, Sun Oil; Lloyd L. Shaulis, General Aniline & Film Corp.; Murray Shields, Bank of the Manhattan Co.; C. A. Sienkiewicz, Phila. Central-Penn Natl. Bank; Nathan L. Silverstein, Indiana U.; George Cline Smith, U. S. Chamber of Commerce; Tillman M. Sogge, St. Olof Col.; W. R. Spriegel, Texas U.; W. R. Spurlock, Eli Lilly & Co.; John R. Stockton, Texas U.; Louis Stevenson, Am. Paper & Pulp Assn.; A. Theodorides, Denver U.; Willard L. Thorp, U. S. State Dept.; Loyal G. Tillotson, Bradley U.; James B. Trant, Louisiana State U.

Rufus S. Tucker, General Motors; Rutledge Vining, Virginia U.; Q. Forrest Walker; Ray B. Westerfield, Yale U.; Edward F. Willett, Smith Col.; Donald B. Woodward, Mutual Life; Charles G. Wright, Chicago Federal Reserve Bank.